DECEMBER 8, 1952

NEWS ISSUE

Electrical World

Price 35 Cents

A McGRAW-HILL PUBLICATION

James F. Davenport takes the reins at Depa with return to Consolidated Edison of James F. Fairman

Albright Plant Poses for Pictures . . . Page 21

Schiller Station Sets a Record . . . Page 32

15 MILLION KVA IMPULSE BREAKER

Newest switchgear advance opens way for increased circuit loadings—greater system economies through use of higher voltage transmission

Transmission voltages of 330-kv or more, with circuit loadings approaching a million kilowatts over a 3-phase line, are now seen as the logical pattern for the future on many heavily loaded and constantly expanding systems.

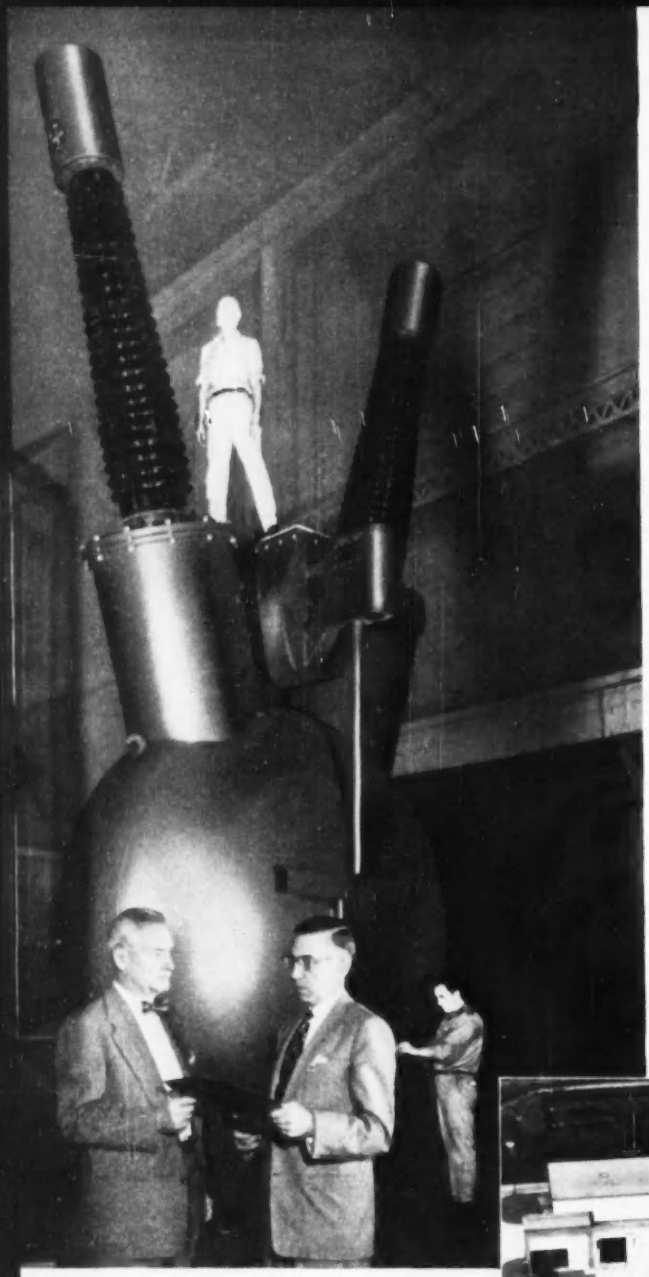
Making possible the economic and other benefits to be gained from such developments are advances like the new G-E steel-clad impulse breaker, one pole of which is shown here. First of fifteen 3-pole units for a 330-kv transmission system under construction, this breaker is rated at 1600 amperes continuous current, 15,000,000-kva interrupting capacity. Features include 3-cycle interrupting time, and 20-cycle reclosing time.

Incorporating the time-tested impulse principle of interruption, the new steel clad breaker design is the result of twenty years of intensive research and development. Behind it is the experience gained in building circuit breakers of continually increasing current carrying and interrupting capacity that have paced every previous step forward in high voltage transmission.

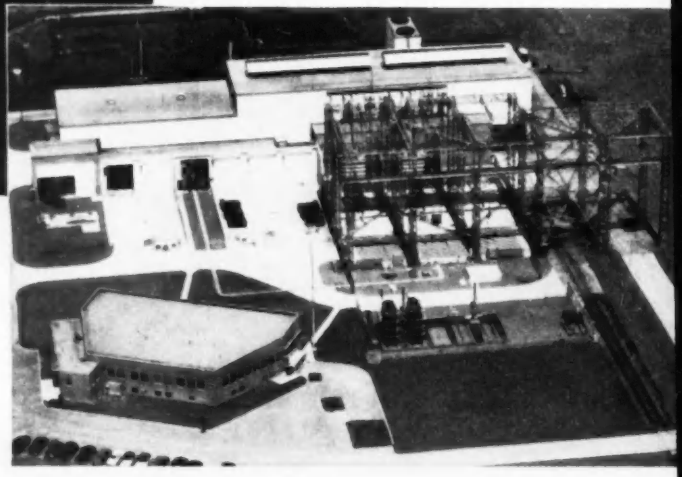
Research leading to further advances in higher voltage equipment will continue, with increasing opportunities for efficient, economical application. General Electric Co., Schenectady 5, N. Y. 601-223

MORE POWER TO AMERICA

GENERAL ELECTRIC



Highest rated circuit breaker ever built, the complete unit comprises three poles, only one of which is shown assembled for testing in the photo above. In the foreground are George Borens (left), General Manager of Switchgear and Control Division, with Earl B. Rietz, Engineer, Power Circuit Breaker Section. Mr. Rietz was responsible for engineering and development work leading to the production of the breaker.

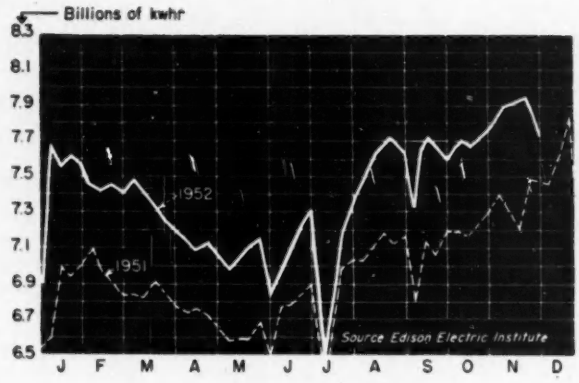


New G-E Switchgear Development Laboratory at Philadelphia (right), providing the world's highest capacity testing facilities, was an important factor in proving design features and making possible the many necessary tests.

VOLUME 138, NO. 23

December 8, 1952

Electrical World



Output Week Ended Nov. 29—7,701,176,000 Kwhr

Per Cent Change From Previous Year

	Total US	New Eng.	Mid. Atlan.	Cent. Ind.	West Cent.	South-east	South Cent.	Rocky Mount.	Pacific NW	Pacific SW
Nov. 29	+3.0	+2.0	+0.1	+3.0	+5.1	+5.8	+5.7	+6.0	−4.5	+5.2
Nov. 22	+11.4	+23.1	+10.5	+13.8	+12.4	+10.6	+13.9	+7.3	−4.7	+13.9
Nov. 15	+7.5	+14.9	+6.2	+7.0	+7.3	+10.8	+7.9	+6.4	−4.2	+11.0

Electric Power Statistics

Peak Load (Million Kw)	Sept.	69.7*	69.7	64.7
Capacity (Million Kw)	Sept.	78.78	78.31	74.29
Production (Billion Kwhr)	Sept.	33.38	34.36	30.25
Hydro		7.36	8.52	7.03
Fuel		26.02	25.84	23.24
Fuel Consumption				
Coal (Million Tons)	Sept.	8.82	8.57	8.60
Oil (Million Barrels)		6.03	5.38	5.06
Gas (Billion Cu Ft)		97.37	104.97	77.34
Sales (Billion Kwhr)	Sept.	30.11	29.39	27.54
Residential		7.66	7.53	6.82
Commercial		5.37	5.46	4.89
Industrial		14.75	14.10	13.62
Other		2.33	2.30	2.22
Net Income Class A & B Companies ($ Million)	Sept.	73.12	68.67	58.95
Estimated Dec. 52 Peak (Million Kw)	Sept.	79.7	80.0	80.3
Kwhr per Residential Customer (12 Month Average)	Sept.	2,131	2,119	1,961
Revenue per Kwhr Residential Service (12 Month Average)	Sept.	2.77¢	2.77¢	2.83¢
Canadian Production (Billion Kwhr)	Sept.	4.99	4.97	4.41

Business Statistics

FRB Industrial Production Index†††	Oct.	231*	231	222
Gross National Product Annual Rate ($ Billion)	3rd Qtr.	344.0	343.2	337.1
E. W. 5 Industry Production Index	Oct.	126.5	125.8	122.1
ENR Construction Cost Index††	Nov.	121.1	120.7	114.7
BLS Consumer's Price Index	Oct.	190.9	190.8	187.4
NEMA Insulation Materials Sales Index†	Sept.	531	451	521
NEMA Electric Appliance Sales Index†	Sept.	231	236	265
NEMA Household Refrig. Sales Index†	Sept.	136	148	114

* Estimated. † 1936=100 †† 1949=100 ††† 1937-39=100 (Unadjusted)

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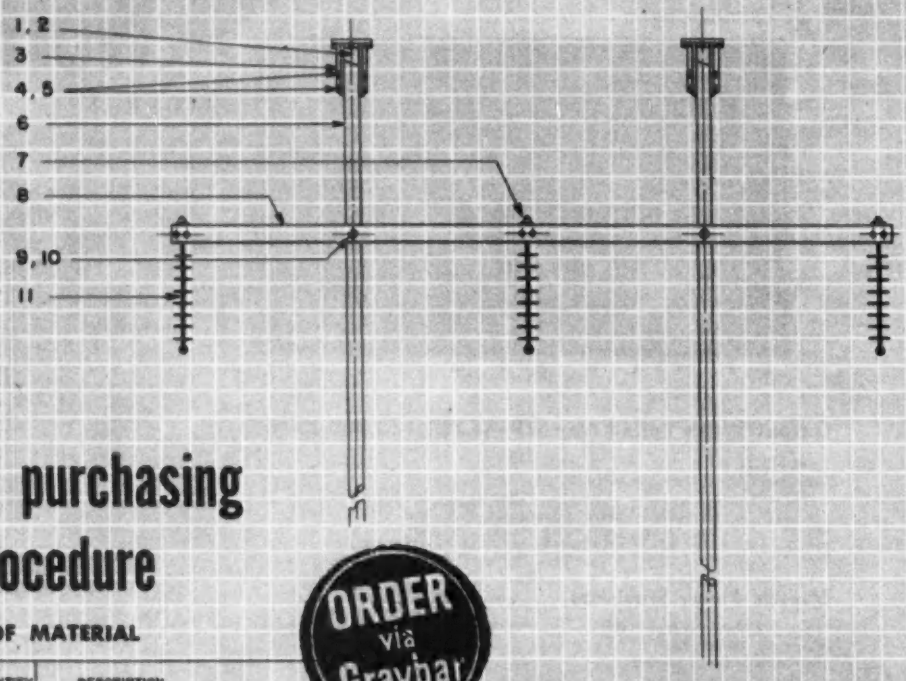

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5	4	MF LOCKNUT 5/8"
6	2	POLE
7	3	STEEL SPACER FITTING W/MOUNTING BOLTS
8	2	CROSSARM
9	2	STUD BOLT 7/8" W/2 WASHER NUTS
10	4	MF LOCKNUT 7/8"
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THE ELECTRICAL WEEK

The Issue's News Highlights—James F. Davenport, who took office last week as head of Defense Electric Power Administration, may be the man to preside over the agency's demise sometime next year, observers in Washington believe.

Idaho Power Co has filed with FPC a new plan for development of the Snake River in the controversial Hell's Canyon area. It calls for three low-head dams instead of five originally planned. Interior wants to build one high dam there.

Ezra Taft Benson, Eisenhower's Secretary of Agriculture, has long been identified with the farm co-op movement.

Off the Washington Wire—FPC has been asked to approve merger of Northern Arizona L&P facilities with those of Arizona Public Service as a step in the ultimate corporate dissolution of Northern.

Bureau of Reclamation has let contract for three 8,400-hp hydraulic turbines for the Little Porcupine plant on Missouri River basin project near Frazer, Mont. . . . Jean R. Walton, former construction engineer at government-built Davis dam and power plant on Colorado River will be in charge of one section of San Diego Aqueduct . . . Lt Gen Lewis A. Pick has been ordered to continue as chief of the Corps of Army Engineers until his successor, Maj Gen Samuel D. Sturgis, Jr, completes his commitments in Europe. Pick's retirement was supposed to have begun Dec. 1.

President Truman has congratulated retiring Depa head James F. Fairman on "a job well done" and thanked him for his services (see page 7).

One AEC expert estimates that freer exchange of information between the United States and Great Britain may save as much as five years in development of an economical power reactor.

First nuclear power station may be built in some foreign country from Point 4 funds, Henry D. Smyth, member of AEC says. He declares cost of electricity produced by an atomic power plant may be low enough to compete with present rates in some other country, but not with the rates in the U. S.

From the Southeast—A Georgia Superior Court declined to enjoin construction of proposed federal transmission line from Clark Hill Dam to Greenwood, S. C. However, the court did forbid construction of a one-mile section of line in the Greenwood vicinity. Further hearings on the petition are scheduled for mid-December.

From West North Central—Jolley citizens vote unanimously to renew Iowa PS 25-year franchise . . . City of Paragould and Missouri Utilities ask Arkansas Public Service Commission approval for city to purchase company's properties in that city and one-mile zone surrounding it.

From Canada—Only if U. S. will buy natural gas from Canada's Peace River, will British Columbia consent to grant water rights to U. S. in southern British Columbia to carry out the Libby Dam project, Lands and Forests Minister Robert Sommers, of British Columbia's Social Credit Government, says in an election speech in support of Finance Minister Einar Gunderson.

From the Far West—J. H. Gumz, Depa area representative, reported last week postponement of any decision on second industrial curtailment of firm power. "We are going to be able to get along without making a decision this week," he said. Bonneville reported last Monday morning peaking load of the federal system was down 125,000 kw from anticipated. Drop gave regional utilities pool safe margin under the 4 million plus peak which might have overstrained the pool. A postcard survey of 1,100 affected Washington and Oregon firms is under way. Reports will be appraised for evaluation of committee's second session early in December.

Construction—Florida Power Corp places in operation new 45,000-kw unit at Avon Park Plant . . . South Carolina E&G has first commercial building type heat pump in area in recently opened office building at Mt. Pleasant, S. C. . . . PS of Colorado plans to spend $20.2 million in 1953.

Labor—United Electrical Workers union members ratify unanimously a contract ending a six-month strike at General Cable's Rome (N. Y.) plant. It states that union membership is not compulsory as a condition of employment. It also includes a 5¢ an hour wage hike, pension and vacation adjustments, and other benefits.

Public Relations—Cleveland Electric Illuminating, Boston Edison, and Monongahela Power sign contracts to take Reddy Kilowatt Service.

Regulation—Ohio PUC will try a new system in 1953 to catch up on some of its back work. By holding hearings one week and executive sessions to reach decisions the next, PUC believes it can clear a backlog of some 50 cases, mostly applications by utilities for higher rates.

Rates—Douglas Wright, Southwestern Power Administration chief, says he will recommend to FPC a boost in SPA rate from 5.6 to 6 mills per kwhr . . . Houston's City Attorney Will Sears tells the League of Texas Municipalities that he terms "pure fiction" current cost valuations some of the utilities place on their properties in seeking higher rates . . . Illinois Commerce Commission sets hearing Dec. 18 on whether Iowa-Illinois G&E can put into effect $357,303 a year rate increase.

Congratulations—American Standards Association reelects Roger E. Gay, president of Bristol Brass Corp, and Edward T. Gushee, vice president of Detroit Edison, president and vice president, respectively . . . H. K. Porter Co, Inc, elects C. S. Beattie and R. E. Anderson vice presidents.

THE ELECTRICAL WEEK
CONTINUED

Puget Sound P&L expects to place the third unit at its Rock Island, Wash., plant on the lines about Dec. 10 . . . Delayed delivery of three carloads of generator parts for Detroit Dam, Ore., 100,000-kw hydro plant has postponed the operation date of Jan. 1 set by the Bonneville Power Administration . . . Arguments in Portland General Electric's suit to get a public hearing on its application to build Pelton Dam on Deschutes River were heard Nov. 24 at Salem, Ore., by Circuit Judge George R. Duncan. A decision may be expected in a few weeks, Judge Duncan indicated.

Niagara Mohawk Power places in operation the first two generating units which are capable of producing 200,000 kw at its Albany steam plant.

Southern California Edison plans to sell 500,000 shares of additional common stock around Jan. 15.

Ohio Valley Electric places orders totaling $80 million for five turbo-generators and five boilers for its 1-million-kw Cheshire, Ohio, plant and six turbo-generators and six boilers for 1.2-million-kw Madison, Ind., plant. Both plants are being built to supply electricity for Atomic Energy Commission.

Vancouver, Wash., City Council passes ordinance increasing the tax on PUD electrical users from 3 to 5%.

Columbia University's Prof Robert T. Livingston says Second Utility Management Workshop will be held for top-level utility executives from May 18 to 29, 1953, at Columbia's Arden House Campus in Harriman, N. Y.

Kitsap County PUD's reconstituted board rescinds purchase resolution authorizing five other PUD's to take over the Kitsap share of what was to have been a six PUD joint purchase of Puget Sound P&L. It also fires Guy C. Myers as its fiscal agent and Ralph Purvis as Kitsap's attorney. Puget's Pres Frank McLaughlin calls the action "invalid." Superior Judge Max Church has continued until Jan. 20 action on legal issues affecting Kitsap's participation in the proposed sale to six PUD's.

Obituary—Washington Reed, 61, Kentucky Utilities vice president, died in Lexington on Nov. 30.

IN THE INDUSTRY

Electric utility companies and gas utility companies may soon have one more thing in common—an enemy. In the Pacific Northwest where for many years the feud over the generation and distribution of electric power has involved municipals, public utility districts, the federal government, and the investor-owner companies, a similar fight is brewing over the distribution of natural gas.

Right now it looks as if the Northwest may get natural gas from Canada within two to three years. But who is going to distribute it? At present the distribution of gas (the artificial kind) is in the hands of private companies. There are no public-owned gas systems in either Washington or Oregon. But this situation provides an opportunity for the "public ownership group."

The Same Old Approach . . . An investment firm and engineering firm are said to be approaching city councils and asking them to employ the firms to perform "certain services before the Federal Power Commission, certain engineering services, and certain services in connection with the issuance and sale of natural gas revenue bonds for the payment thereof."

This plan of action sounds very similar to the one used in encouraging public utility districts to take over the generation or distribution of electricity from the private companies. And again the plan seems to be working. Some 20 cities in Washington and Idaho have employed the firms and intervened in applications filed with the Federal Power Commission by three pipeline companies. Two of these would bring in Canadian gas; the other would bring in gas from states to the southeast. FPC will conduct hearings on the Canadian lines on Feb. 16.

Low Electric Rates Have Retarded Gas Use . . . Only six of the cities in Washington have gas service now. The rest never had it or have given it up. Artificial gas made from expensive fuel has had a hard time competing with electricity at the low rates charged in the region.

The most worried private gas companies are those in Washington. It wouldn't require much of a change in the state's PUD law to permit the PUD's to distribute gas as well as electricity. And the companies know the battle the electric companies in the area have had to protect their investment. They do not relish a similar struggle.

TECHNICAL NOTES
ARCHER E. KNOWLTON

(Items adapted from identified papers of ASME 1952 annual meeting)

Topographic and meteorologic factors favorable to rapid and uninterrupted dissipation of air-borne matter are influencing choice of otherwise appropriate industrial plant sites. (70)

Air-pollution control equipment is reportedly being installed at a current annual outlay of $100,000,000. (70)

Fabric filter separators for industrial dust are customarily rated at 3 cu ft per min per sq ft of filter fabric. Reverse-jet design is said to raise the ratio to 10 or even 20. (70)

Tall stacks tend to disperse the contaminants carried by their gases. Maximum ground concentration varies inversely with square of stack height. (70)

Reduced maintenance of the induced-draft fan is often more than offset by the operation and maintenance of a dust-collector installation. (69)

Electrostatic precipitators were expected to remove 600 more pounds of ash per hour (340 vs 940) than mechanical collectors but to cost $545,000 instead of $420,000 for a plant burning 73,500 pounds of 9% ash coal per hour in producing 750,000 pounds of steam per hour. (69)

Davenport May Be Last Head of Depa

• Though the federal agency could end with expiration of materials controls June 30, the new top man won't be directing it on a "caretaker" basis. Too many problems—metals, equipment, power shortages and the like—confront him

• The West Coast utility executive steps in at a time when things at Depa are in good order, however. Private and public power proponents alike say much of the credit for this should go to the retiring administrator, James F. Fairman

Into the top job at Defense Electric Power Administration last week stepped James Franklin Davenport, vice president and budget director of Southern California Edison Co.

On loan from his company, Davenport becomes the third utility executive to head Depa since the agency got down to business in late 1950. His immediate predecessor, James F. Fairman, returns to his position as vice-president of Consolidated Edison Co of New York after steering the agency through 16 months of its turbulent history.

With the overall defense mobilization program now reaching its peak, many Washington observers believe Davenport may preside over the demise of Depa sometime next year. This will depend upon decisions to be made by the next Congress and the new President.

Under the amended Defense Production Act, Depa and the other materials control agencies will cease to exist June 30 unless the Act is extended. The new President may terminate them earlier if he chooses.

How Long? . . . Davenport's own view is that Depa's services will be needed as long as other control agencies are in existence, but he has no desire to prolong the life of the agency beyond its period of usefulness.

"Electrical industry men remain at Depa only because the industry wants them here," says Davenport. "Don't think any one of us is trying to make the job last any longer than is necessary."

While the life of Depa may be limited, Davenport will not be administering it on a "caretaker status." A number of vexing problems face the agency and some touchy situations face the new administrator. Among them:

• Depa must continue to sell the electric utilities' steel requirements to the control agency allocating this metal. As former Administrator Fairman pointed out in a recent article (EW, Nov. 3, p 80), the power industry will continue to feel the effects of last summer's steel strike for months to come.

• The agency must continue to try to coordinate delivery of heavy electrical equipment with increasing power requirements. With most equipment manufacturers now working at capacity, it is all but impossible to make any real changes in delivery schedules that will not do more harm than good.

• On top of normal expansion and stepped-up defense power requirements, the agency is also responsible for seeing to it that some five million kw of capacity is installed over the next few years for atomic energy plants.

• Power curtailment measures in the Pacific Northwest may offer new problems during the next few months, especially if more strict rationing becomes necessary.

One of Davenport's duties at Southern California Edison is to coordinate relations between the company and government agencies. This experience should come in handy at Depa, since the agency is one focal point between government and industry.

This is not Davenport's first tour of duty in Washington. During World War II he served as an Army Air Force colonel at the Pentagon before going to the Pacific in a technical capacity.

Except for military service, the new Depa head has been with Southern California Edison since 1926. He joined the company as a draftsman soon after graduating from Harvard with a B.S. degree in mechanical engineering.

Davenport was promoted to hydro engineer in 1929, moved up to superintendent of generation in 1936. In 1940 he was made assistant manager of operations and in 1946, assistant vice-president. He assumed his present position as vice-president and budget director in 1950. Since Oct. 1, Davenport has been on leave to serve as deputy director at Depa and prepare for his present role.

Fairman Record . . . Tasks before the new administrator are made somewhat easier by the prestige Depa gained under Fairman's leadership. As a result of a long educational campaign, other materials control agencies now have a better appreciation of the importance of the power expansion program. Until the steel strike and the advent of the latest atomic energy expansion program, the power program was beginning to run smoothly.

During his 17 months as administrator, Fairman has established a reputation for fairness and accomplishment. In his quiet way he has overcome many of the problems thrust upon him. When Consolidated Edison requested that he return to the company earlier this year, government officials, industry men and public power spokesmen banded together to ask that his term of government service be extended.

Seldom has the official of a large electric company enjoyed the confidence of so many segments of the industry and government during such a brief tour of duty in Washington.

As he prepared to return to Consolidated Edison, Fairman received

letters of appreciation for his services from electric company officials in many parts of the country.

He has also received tributes from public power spokesmen. Witness this one, from Alex Radin, general manager of American Public Power Association:

"I have no hesitation in saying that we have nothing but praise for the fair and impartial manner in which Depa has been administered by Mr Fairman."

National Rural Electric Cooperative Association paid him a similar tribute.

Paeans . . . A Congressional committee studying the electric power program was almost lyrical:

"With apologies to John Bunyan of Pilgrim's Progress fame, it may be more than coincidental that the Administrator of Depa is named Fairman . . . all segments (of the industry) believe they have received fair treatment from Depa in carrying out its share of the defense mobilization program."

And in the letter accepting Fairman's resignation, Interior Secretary Oscar Chapman wrote: "I must tell you, in all candor, that your performance has been outstanding. Your energy, your vision, your forthrightness have been exceeded only by your desire to seek answers to vexing problems based solely on the consideration of the public interest."

Step Up of Construction at Dalles Dam Forecast

Step up of construction work at The Dalles Dam on the Columbia River until peak activity in 1955-56, was forecast by Brig Gen C. H. Horpening, assistant chief in charge of civil works, Corps of Engineers, in Portland, Ore., Nov. 7, on a tour of western projects.

Assuming Congressional appropriations keep the work on schedule, The Dalles Dam powerhouse is slated to put generators on the line in the fall of 1957.

"We have made our presentation to the Bureau of the Budget for fiscal 1954," the general reported. "I can't reveal detailed figures, but we do expect that construction on dams which are already under way will continue pretty much on schedule. What the policies of the new Congress will be on new construction, no one can say."

Three Dams Instead of Five

Idaho Power Co files this revision of its plan for the controversial Hell's Canyon site with FPC

An amended plan calling for construction of three dams on the Snake River in the controversial Hell's Canyon area instead of the five originally proposed has been filed by Idaho Power Co with the Federal Power Commission.

The new proposal, to provide more firm capacity at a lower cost per installed kw, includes dams at Oxbow, Brownlee, and Hell's Canyon. Previously proposed to develop the 100-mile stretch of the river downstream from Weiser to Lewiston, Idaho, were five low-head dams to be built at the three sites and at Bayhorse Rapids and Sturgill.

Department of Interior, however, wants to build a 720-ft dam at Hell's Canyon which would flood the power sites proposed by Idaho Power. This high dam would cost about $360 million and would develop 688,000 kw. Further, the department credits to it 436,000 kw which could be developed at downstream plants.

Which plan will go through will depend on decisions of FPC and the Congress (EW, April 7, p 94).

Three-Dam Cost . . . Total cost of Idaho Power's three dams would be $130,050,000 for 783,000 kw of capacity as compared to $127,995,000 for the five dams with a capacity of 714,000 kw. Thus cost per installed kw of the three dams would be $166 as compared to $179.26 per kw for the five dams, company officials asserted.

Under the new proposal, capacity at Brownlee would be 360,000 kw; Oxbow, 151,000 kw; and Hell's Canyon, 272,000 kw. Under the previous plan, Bayhorse would develop 120,000 kw; Sturgill, 114,000 kw; Brownlee, only 90,000 kw; Oxbow, 140,000 kw; and Hell's Canyon, 250,000 kw.

IDAHO POWER'S new plan drops two dams

Principle reason for the increased capacity is a change of plans for the Brownlee site. Here the dam would be raised more than 200 ft above that of the original design to utilize the fall of the river previously planned for development by installations at Sturgill and Bayhorse. In the new plan, Brownlee dam would be 277 ft high to create a 55-mile reservoir. Of the resulting 1.5 million acre-ft of storage, 1 million acre-ft would be usable for power. Also included are a 208-ft dam at Hell's Canyon and a 115-ft structure at Oxbow.

In its amended application, Idaho Power said the initial unit could be brought into operation from 18 to 24 months after construction began on the project.

Lower Cost Per Kw . . . Vice Pres R. E. Gale commented: "Our more detailed designs, which include a substantial change in original planned spillway capacity from 190,000 sec-ft to 300,000 sec-ft, and current cost estimates of various construction plans indicate a lower cost per kw of installed capacity than for any other combination of dams that would develop approximately the same reach of river.

"These three project proposals with anticipated storage will provide tangible navigation benefits superior to those resulting from a high dam at Hell's Canyon. Moreover, storage planned for Brownlee, when considered in conjunction with storage at Mountain Sheep (a site downstream from Hell's Canyon), produces a combination superior to a high dam at Hell's Canyon for upstream flood control and storage desired by Army Engineers."

A hearing on the company's application to build at Oxbow was scheduled for Jan. 12, but Idaho Power has asked FPC for a postponement of about 30 days to prepare additional engineering data because of its alternate proposal.

No SPA Curbs . . .

. . . on power service to customers planned despite drought conditions at federal dams

Although severe drought conditions in the Southwest have lowered sharply power-pool elevations in reservoirs at government projects, electric service to customers of Southwestern Power Administration will not be curtailed. In making this statement, SPA Administrator Douglas G. Wright added that the possibility of any curtailment in the future is extremely remote.

Hardest hit government project in the Southwest is Denison Dam on the Red River between Oklahoma and Texas. One generator has been shut down to conserve water. At the end of October power-pool elevation at the dam was 605.98 ft, a new record low since the reservoir first filled in March, 1945. Power storage on Oct. 31 was 50.5% of total making possible a generation of 47.7% of total power-pool capacity.

Stream Flow Abnormal . . . Water storage at Norfork Dam project, on North Fork River in the Ozarks of north-central Arkansas, also is abnormally low.

At Narrows Dam project on the Little Missouri River in southwestern Arkansas, water storage was 58% of capacity and at Bull Shoals Dam on the White River in northern Arkansas 69% of capacity.

On Nov. 20 SPA began transmitting power from Bull Shoals and Norfork projects down to Oklahoma in order to give the reservoir at Denison project a chance to refill.

NJUA Told Utilities Don't Need Federal Subsidies

"We received from the election an opportunity to do a job—the freedom way," said B. L. England, president, Edison Electric Institute, addressing the New Jersey Utilities Association on November 21 at Absecon, N. J.

England said electric utilities in this country do not seek nor need government subsidies. He added that government at all levels can help in the conservation of materials and manpower by promoting an atmosphere in which strong and independent utility systems can coordinate their construction programs and pool their generating resources to take advantage of time differences, differences in shapes of load curves, and so forth.

A record boom year is expected for 1953 but "in the three following years there are many clouds gathering on the horizon" said Gilbert MacKay, a business consultant and partner of Gilbert MacKay Associates. The expectations in 1953 are: Federal Reserve Board index average 225, up from 217 for 1952; steel output 113 million tons compared with 105 million in 1950 and 90 million in 1952; total kwhr sales up 7% from 338 to 365 billion. The cost of living is expected to remain virtually unchanged. However, wages will be up 4%, so real purchasing power will be higher. Heavy industry backlogs, highest on record in peacetime, although weighted with defense contracts, are foreseen. No real slackening is seen in the picture next year. Soft goods industry inventory positions are now corrected and, as a result, the non-durable manufacturing industry is expected to average higher in 1953.

IES Group Tries Out Meters

More than 40 chairmen and members of Illuminating Engineering Society technical subcommittees met recently at Buffalo, N. Y., to discuss latest developments in the illumination field and to hear committee progress reports. A highlight of the session was a Task Evaluation Clinic at which procedures for practical use of several visibility and brightness meters were demonstrated.

A group of members attending the forum are shown using visibility meters to determine illumination levels necessary for various difficult seeing tasks. They are (l to r) Charles Justice, Philadelphia Electrical & Manufacturing Co; S. K. Guth, General Electric Co; H. H. Manwaring, vice president, Philadelphia E&M, and Technical Committee Forum chairman; E. M. Strong, IES president; and C. L. Cottrell, Cornell University.

1st Clark Hill Unit, Power Line Coming in Together

Construction of a transmission line by South Carolina Public Service Authority (Santee-Cooper) to carry power from Clark Hill Dam is running neck-and-neck with testing of the first of the federal project's generators.

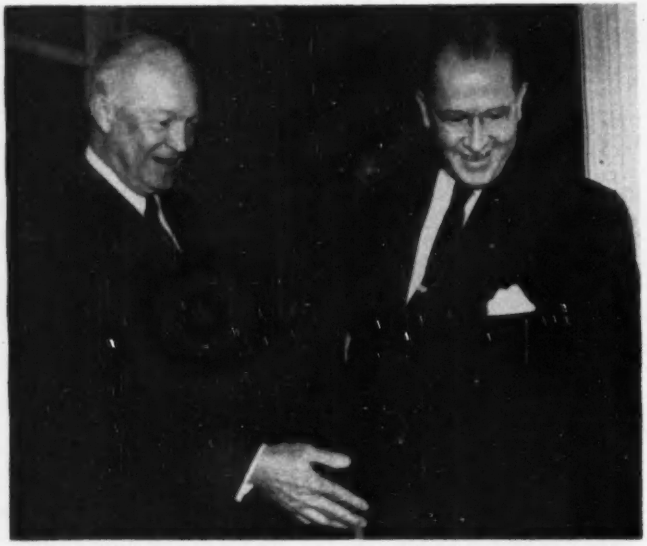
Asked if there was a likelihood that the unit would be ready before the line was completed, Col E. E. Wilhoyt, Savannah District Engineer, said:

"We might beat them by a few days, but there won't be much difference one way or another."

Clark Hill is a Corps of Engineers project on the Savannah River between South Carolina and Georgia that will have seven 40,000-kw units.

State Sen R. M. Jefferies, general manager of Santee-Cooper, said the line was being built to connect with the authority's St. George-Orangeburg transmission network.

"The construction schedules," he said, "call for completion of the transmission line just about coincidentally with completion of the first unit."



EZRA TAFT BENSON, Secretary of Agriculture-designate visits with President-elect Eisenhower

New REA Program Overseer

Ezra Taft Benson, Eisenhower's Secretary of Agriculture-designate, will be responsible for rural electrification

With designation of Ezra Taft Benson as next Secretary of Agriculture, President-elect Dwight D. Eisenhower has filled the cabinet posts which have a direct concern with electric power development.

Douglas McKay, governor of Oregon, was previously named Interior Secretary in the Eisenhower cabinet (EW, Dec. 1, p 80).

Unfilled Jobs . . . Attention now turns to a number of second- and third-level positions directly affecting the government's role in power development. Some of these are still to be filled by Eisenhower. Others are to be filled by the new cabinet appointees.

As Secretary of Agriculture, Benson will have the responsibility of keeping tab of the federal government's rural electrification program. Rural Electrification Administration is an agency of the department, although it has semi-independent status.

REA Administrator Claude Wickard has indicated he will remain in his present position until his term expires in 1955.

Could Wield Influence . . . However, through delegation of authority and budget recommendations, Benson could have a marked influence upon the future direction of REA policies. Friends and acquaintances call the future Secretary of Agriculture a "middle-of-the-roader." Opponents in the cooperative movement label him a "conservative."

There is little controversy about REA financing of distribution lines. Main problem facing Benson at REA is the extent to which the federal government will support generation and transmission cooperatives. The present administration has approved government financing of a number of these co-ops, but has not recently received much encouragement from Congress in continuing this policy.

Another question facing Benson will be the size of the administrative staff at REA. Some observers believe a Republican administration might want to cut personnel employed in the electrification program.

Views Unknown . . . Neither government officials nor farm leaders in Washington are acquainted with Benson's views toward the rural electrification program. So far as can be determined, he has had no occasion to express any views on REA operations.

He is known mainly for his marketing cooperative work. Beginning in 1939, he served for a number of years as executive secretary of the National Council of Farmer Cooperatives. Since 1943, he has devoted the major part of his time to work with the Mormon church, of which he is one of the twelve apostles.

Benson was born and raised on an Idaho farm. He attended the Utah State Agricultural College and received a B.S. degree from Brigham Young University and a M.S. degree in agricultural economics from Iowa State College. During this time, he was a county agent in Idaho and helped organize the Idaho Cooperative Council.

Secondary Posts . . . Second-level positions directly relating to power are still to be filled in the Eisenhower administration. These include:

- Designation of a chairman and appointment of an additional member of the Federal Power Commission. Commissioner Nelson Lee Smith, an independent, is being mentioned for the chairmanship.
- Designation of a chairman and appointment of another member of the Securities and Exchange Commission. Commissioner Richard B. McEntire, a Kansas Republican, is mentioned as SEC chairman.
- Appointment of a Commissioner of Reclamation to succeed Michael Straus, who resigns Jan. 20.

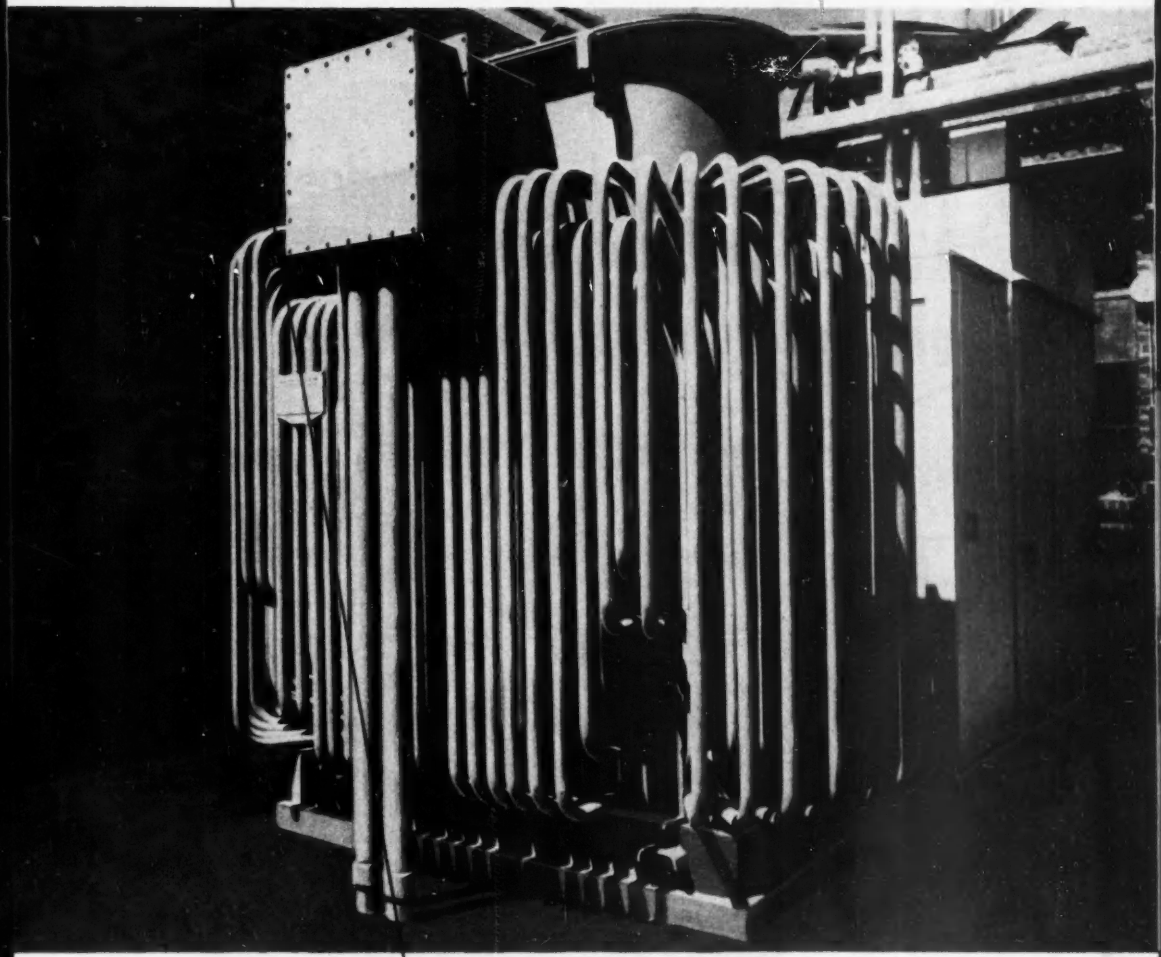
Additional changes which may be made under the Eisenhower administration soon after Jan. 20 include:

- Appointment of a new administrator at Bonneville Power Administration to replace Paul J. Raver.
- Appointment of a new Southwestern Power Administrator to replace Douglas G. Wright.
- Appointment of a new Southeastern Power Administrator to replace Charles Leavy.

All three of these positions are directly under the Secretary of Interior.

The Bonneville act provides for the replacement of the BPA administrator by a new administration. There is no legislation spelling out the organization of either SPA or Sepa. Administrators of both these agencies were appointed by the Interior Secretary, and presumably could be replaced by a new secretary.

MORE POWER FOR CALIFORNIA INDUSTRY



Many industries economize by installing transformers like this Kuhlman 2000 KVA 3 phase, Saf-T-Kuhl transformer, rated at 2.4 KV, located at Fiberboard Products Inc., Antioch, California.

Because Saf-T-Kuhls contain a cooling fluid which is 100% safe from the danger of fire or explosion, this firm was saved the expense of building a fireproof vault. Cooling of coils cannot be impeded by sludge deposits because the fluid is non-sludging.

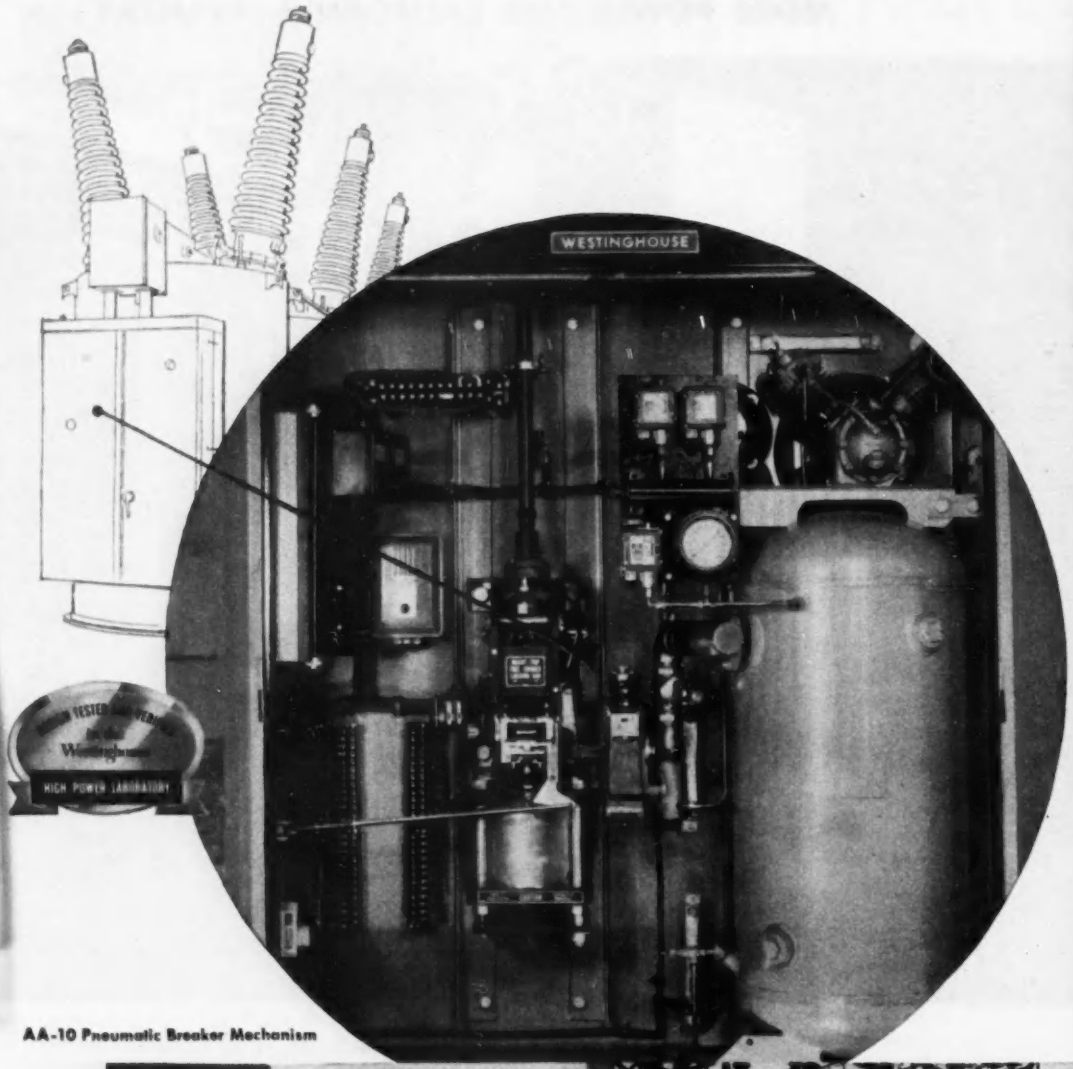
Saf-T-Kuhls, like all Kuhlman transformers, are expertly engineered and solidly built. Kuhlman has been building transformers that way since 1894. Why not specify Kuhlman for your next installation? Write for complete details. For more information about Saf-T-Kuhls ask for bulletin CS-501.

Kuhlman

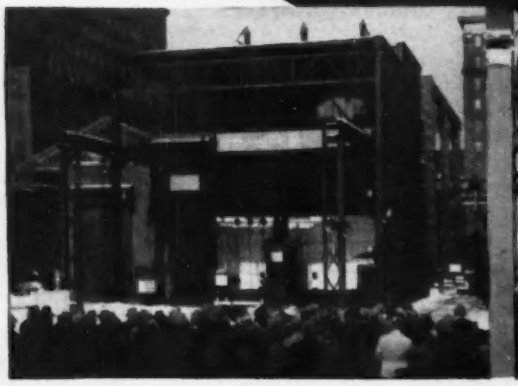
KUHLMAN ELECTRIC COMPANY • BAY CITY, MICHIGAN

The complete Kuhlman line includes Distribution, Dry Type, Power, Saf-T-Kuhl, and specialty units.

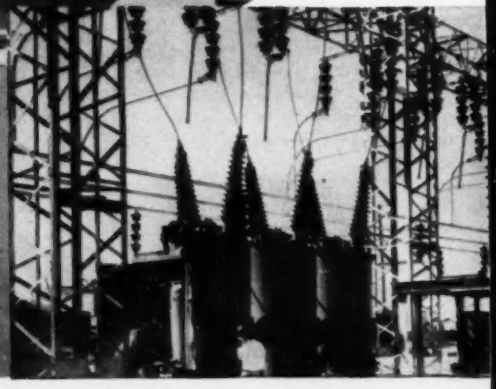
EXPORT REPRESENTATIVES: *International Standard Electric Corporation,*
67 Broad Street, New York 4, N.Y. Cable Address, Microphone, N.Y.



AA-10 Pneumatic Breaker Mechanism



These breaker mechanisms, like every advance in Westinghouse apparatus design, have been proved in exhaustive tests in the Westinghouse High Power Laboratory.



This 10,000,000-kva, 161-kv, 3-cycle breaker is equipped with an AA-10 pneumatic mechanism, and arranged for 20-30-30 cycle multiple reclosing.

New Breaker Operating Mechanisms Combine High Speed Reclosing...and Mechanically Trip-Free Opening

Two pneumatic operating mechanisms—the AA-7 and AA-10—now handle the complete range of Westinghouse Oil Circuit Breakers, from 15 kv, 500,000 kva to 230 kv, 15,000,000 kva. They provide new standards of operation.

THE AA-10 MECHANISM IS . . .

Larger . . . more powerful to meet the closing requirements of today's highest rated breakers.

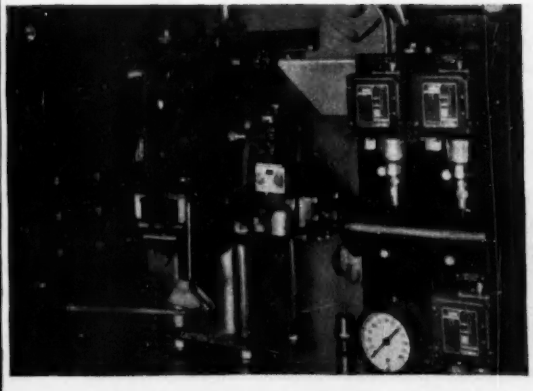
Selective . . . It trips mechanically trip-free whenever there is high-pressure air in the closing cylinder . . . contacts open unrestrained . . . never a drag from the closing piston. For high-speed reclosing, the mechanism trips non-trip-free . . . opens only part way and quickly recloses, greatly reducing stress on both the mechanism and breaker.

Unlimited Reclosing Possibilities . . . High-speed reclosing in 20 cycles, or . . . ultra-high-speed reclosing in 15 cycles or less, or . . . multiple high-speed reclosures.

THE AA-7 MECHANISM . . . Mechanically trip-free for all operations . . . meets the closing requirements of moderately loaded breakers and provides 20-cycle reclosing even after mechanically trip-free opening.

Proved Operation

Exhaustive tests in the Westinghouse High Power Laboratory and field experience on the largest breakers in service today are your assurance of perfect mechanism performance. For complete details, ask for Bulletin DB 33-125. Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.



The AA-7 mechanism, like the AA-10, features roller-bearing latches, no adjustments, simplified air control, unrestricted access to all components.

See "Electrical Proving Ground"

The dramatic story of the Westinghouse High Power Laboratory in sound and color motion picture. For details see your Westinghouse representative, or write Westinghouse Film Division, P. O. Box 868, Pittsburgh 30, Pa. J-60782

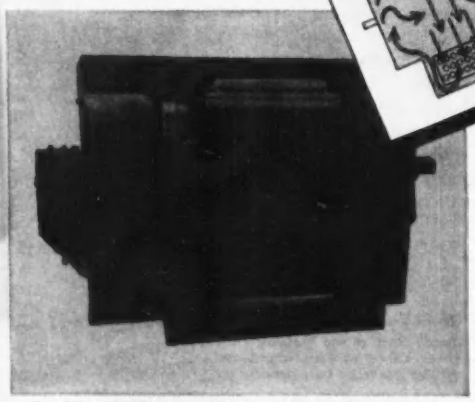
ELECTRICAL PROVING GROUND

YOU CAN BE SURE... IF IT'S Westinghouse

POWER CIRCUIT BREAKERS

IT'S COOL— IT'S QUIET!

The ELLIOTT TOTALLY ENCLOSED WATER COOLED MOTOR



The Elliott TEWC motor, with cover removed from the heat exchanger unit. These cool, water tubes take the heat from the fan-driven air which circulates around them and back to the motor. (Note plan view above.) This motor drives a boiler-feed pump.

Here is a fine example of the adaptability of Elliott Fabri-Steel construction to the requirements of individual motor design. Note the simple, clean lines of this 2000-hp two-pole induction motor, ideally fitted for operation where dirty atmosphere required totally-enclosed design, and surroundings demanded the quiet of totally-enclosed water cooling.

With Fabri-Steel construction Elliott engineers found no difficulty in placing the heat exchanger tube bank just where it should be for most efficient cooling, at the same time achieving pleasing lines in outward design.

L-813

ELLIOTT COMPANY

[illegible] BROOMALL, PA.

NW Residents Put to Test

If voluntary power conservation fails to trim load by 100,000 kw, industry faces a second consumption cut of 10%

Darkened halls, dim bank and hotel lobbies, fewer home lights, and nonglowing neon signs are reminding Pacific Northwest residents this week that their community spirit is on test. They've even been asked to bathe but once each week.

Unless a power conservation program trims loads of the regional pool by as much as 100,000 kw, industry faces a second Defense Electric Power Administration order to cut consumption another 10%. Some of these people already are off payrolls because of the Nov. 17 slash on firm power contracts, first mandatory order of its kind in the region's history.

Not Too Confident . . . Depa and utilities officials aren't too confident the voluntary program will be adequate. But every kilowatt saver counts in an area where small consumers use almost three times the national average.

Northwest Utilities Conference Committee members debated Nov. 18 in Tacoma whether to recommend a second firm contract reduction. Weekend rains on the Cascade slope had hinted of a weather change and the voluntary dim-out was just beginning so the private and public utilities operators postponed action. Conferees agreed to wait two or three weeks to reappraise the situation before ordering a second cut in big industry loads that could cripple the region's economy.

Johann H. Gumz, chief of Depa's utilization and conservation branch, warned the critical situation was not just one of peaking hours but around-the-clock. "If savings are not made, the public can be faced with a lot worse situation later on."

Colder weather—by as much as 5 deg—could boost loads 75,000 kw overnight, wiping out voluntary conservation gains, Gumz added.

Operations Curtailed . . . By the end of the first week the pattern was taking shape.

Plywood and sawmills along the vast fir belt from Puget Sound deep into Southern Oregon—the region's largest industry—already have lopped off night shifts or a full day. Big pulp and paper installation, unable to slow down, prepared to shut down one or two days. Oregon Steel Mills' three big electric furnaces in Portland will stand cold 22 hours a week. At Mead, Wash., Kaiser Aluminum & Chemical Corp reported layoff of another 295 workers when a fourth potline went off. Reynolds Metals Co laid off 90 workers at its Longview, Wash., aluminum plant. Aluminum losses in the Northwest now amount to about 1 million lb daily.

National Biscuit Co's huge ovens in Portland were affected, as were the production schedules of electro-chemical and metallurgical plants. In Salem and Olympia capitol domes were unlighted. At Bonneville dam powerhouse, the Corps of Engineers said minor items of conservation—lights and devices—had saved 10,884 kwhr daily.

Uncertainty . . . Just where the first week's full scale curtailment and the accelerating voluntary plans would leave the pool wasn't certain. After the first day, private and public system operators reported only 90,000 kw had been trimmed. But this was still below expectations for the starter. Bonneville had figured Monday Nov. 17 load at 130,000 kw over Sunday's load. But the pool jump was only 40,000 kw. The big Bonneville system estimated its Nov. 18 load—the second day—was off 5% from the 1.4 million kw BPA had been delivering to the pool.

Newspaper editorials were plugging the once-a-week Saturday night bath, had fun mixing laziness with civic duty, and radio announcers took station identification time from big network show interruptions to urge kilowatt savings. Newspaper display ads asked readers to "protect jobs by saving electricity."

Cost Proposal . . . Bonneville Administrator Paul Raver has proposed that utilities join BPA in seeking Congressional approval for Bonneville's absorbing the high cost of extra steam generation during peaking and shortages. This referred particularly to the situation in the aluminum industry.

Raver said it would be cheaper for the nation to assume this cost than to reimburse private utilities of Ohio Valley for building new steam plants to boost primary aluminum ingot production 200,000 tons annually under proposed defense production program.

Zoning Hearing . . .

. . . set for Dec. 11 on Connecticut L&P's petition for permission to build Manresa plant

Connecticut Light & Power Co's petition for a zoning exception which would allow the company to build a steam plant on Manresa Island off Norwalk, Conn., comes up before the Norwalk Zoning Commission this Thursday (Dec. 11).

The utility's announcement of plans to build the plant on Manresa Island has met with strong public disapproval. The city council and citizens objected that the plant would decrease value of "exclusive" shore-front property across from the island and would shower the city with fly ash (EW, Oct. 13, p 8).

Since that time Connecticut L&P employees have been distributing booklets outlining the need for additional power in the area and the advantages in taxes, employment, and business which would result from construction of the plant.

Chamber Acts . . . And the company's campaign for the plant has been given a boost by the Norwalk Chamber of Commerce. On Nov. 22 the organization came out in favor of construction of the plant. The chamber's action came after a special committee had visited Rochester Gas & Electric Co's plant at Greece, N. Y., New England Power Co's Salem (Mass.) Plant, and Long Island Lighting Co's plant at Port Jefferson, N. Y. All three adjoin residential areas.

The committee reported that operation of the three steam plants had not resulted in water pollution, only small amounts of fly ash were emitted from smoke stacks, and noise was negligible.

In making its decision the chamber declared the advantages of the plant outweighed the disadvantages. It was pointed out that taxes on the plant would amount to $200,000 a year and the annual payroll would be in excess of $300,000.

ALABAMA POWER CO (arrow) is one of the many tall buildings in Birmingham whose 330,000 population make it largest city in state

Alabama Power—Birmingham Merge

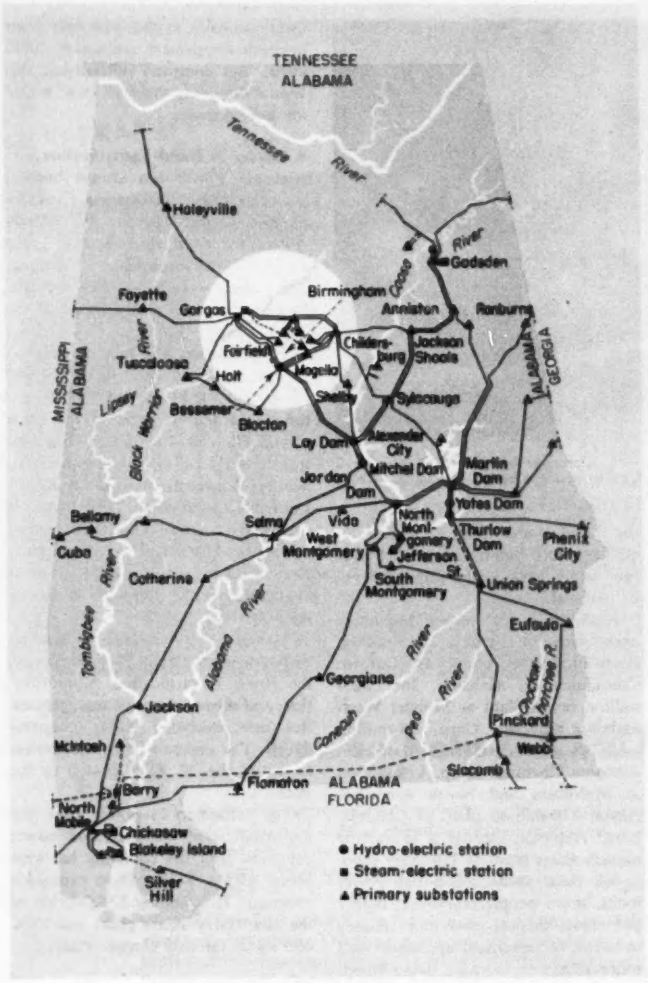
Southern Co subsidiary now has 500,000 customers. Operating economies will aid company, and increased resources will make possible better area promotion

Birmingham, largest city and industrial center of Alabama, is now in the service area of Alabama Power Co as a result of the merger on Dec. 1 with Birmingham Electric Co. Alabama Power has had Beco as a subsidiary since 1950 and for years has supplied its power requirements.

Alabama Power got a good property and a well-knit and experienced organization in Beco. And in Birmingham, Alabama Power will have a growing community bound for greater progress, not only in iron, steel, and coal, but in diversified industry and commerce. Civic leaders vision Birmingham as the South's trading center.

The formality of the merger did not cause even a ripple in Birmingham's community life. The only change noted was that Beco customers will get their power bills from Alabama Power. But it now has closer ties with Birmingham and can take a more active part in civic and business affairs.

All Beco employees have a spot in the merged company, and during the


TENNESSEE
ALABAMA
Tennessee River
Coosa River
Tallapoosa River
Black Warrior River
Tombigbee River
Alabama River
Chattahoochee R.
Conecuh
Pea River
Hatchechubbee Creek
Hatchechubbee Creek
Hatchechubbee Creek

GORGAS PLANT is three plants in a small area. No. 1, at upper left, has 70,000 kw. No. 2 has 320,000 kw. No. 3 will be erected nearby with its first 150,000 kw scheduled for 1955

pliances, arranging cooking schools, and making people more conscious of the benefits of electrical living.

There is a staff of 45 home service advisors. When a dealer sells a major appliance a home service advisor calls on the customer to advise on getting the most use from it. Alabama says that this is public and customer relations right into the home.

To make its sales organization more effective the company will split its commercial and residential sections. Efforts will be concentrated on building up residential power use in Birmingham in competition with gas, and Alabama will go after bigger commercial markets in other areas.

Alabama Power has been a prime mover in the rapid industrialization of Alabama, bringing about better balance between industry and agriculture. Farming is big business, but row crops are giving way to green pastures and beef cattle because of shortage of farm labor. People from the rural areas migrating to the cities are going into industry, and this labor market is attractive to new plants.

With this change in the state economic outlook the big drive has been for new industries. Since 1941 more than 429 new plants or industries have located in the company's service area. They invested over $211 million, added 39,227 employees, and produced payrolls of $74,754,600 annually. Importance of these new industries and plants in the diversification which gives stability to the area.

Big business has been attracted to the area and the trend is reflected in the large number of multi-million-dollar plants completed in the past few years now under construction, or planned.

Here are a few of the important ones: General Electric, $10-million electronic tube plant at Oxford; Courtaulds of Alabama, Inc, $25-million rayon plant at Mobile; Westinghouse Electric Corp, $4-million lamp plant at Reform; Mathieson Alabama Chemical Corp, $10-million at McIntosh; and North American Rayon $20-million plant at Childersburg. Appleton Electric is to start its million-dollar plant at Trussville soon.

All these mean additional power loads, more people employed, higher per capita income, and more money to spend for electrical appliances and other things to increase living standards.

Present Industries Are Spending More . . . And while these new industries are spending money long established Alabama concerns are spending even more, $186-million this year. It is estimated that for every $1 spent on new plants there is $15 spent on expansion and modernization of existing plants.

Here is what this has meant to Alabama Power, as revealed by its survey of 561 industrial customers. In 1941 they had 312,467 kw of connected load and used 1.2 billion kwhr. These same customers in 1951 had 484,430 kw of connected load and used 1.9 billion kwhr, a 55% increase in load and 63% in power use.

Promotion among urban residential customers has lifted power use 300 kwhr annually in the past two years to reach the present average of 2,572 kwhr. But company officials see this annual use going to 6,000 kwhr within the next decade.

A Leader in Rural Electrification . . . Alabama Power has always been a leader in rural electrification. Evidence of this is the Thomas W. Martin Award for rural electrification given each year by Edison Electric Institute. This award was established by Mr. Martin, chairman of the board of the company, in 1932.

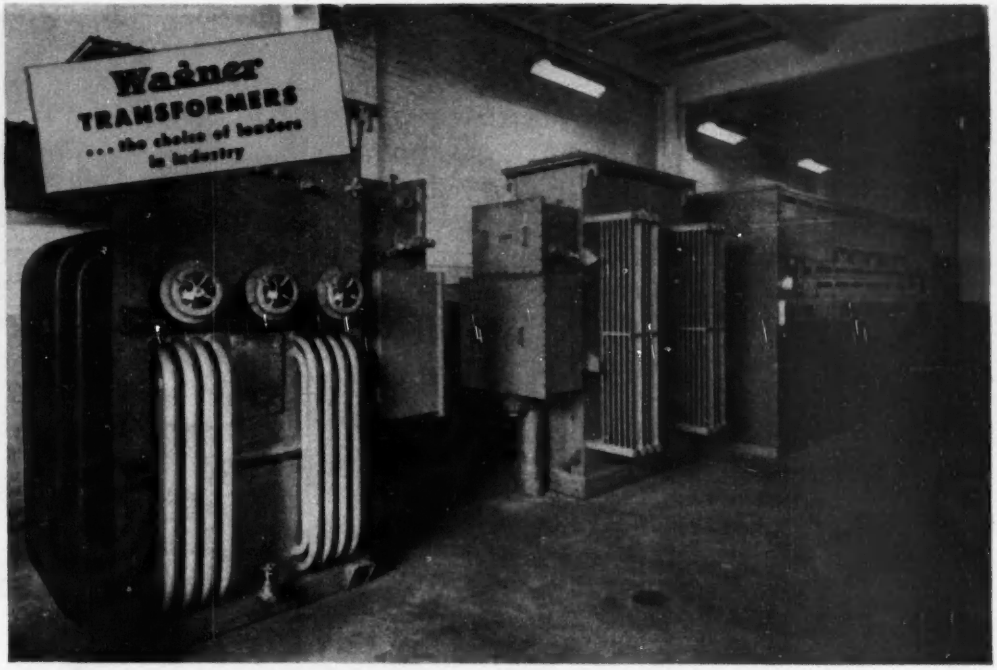
The company has built more than 11,276 miles of rural lines, 12,660 since 1945. It has added 75,820 customers to put its total in the rural classification at 104,000. It has also transferred 13,441 to its urban classification. Power use has risen from 343 kwhr in 1924 to about 2,000 kwhr. It is expected to go to 3,000 kwhr within five years. More than 95% of farmers have electric service, 98% have it available, but the company is aiming for 100% use.

Alabama Power has had its troubles with the Tennessee Valley Authority, the Rural Electrification Administration, and other federal power agencies. But now everyone works cooperatively. The company furnishes power to 12 of the 22 REA co-ops in the state.

The expansion in power sales and industrialization has increased power demands. But the company has kept ahead with a $116-million expansion program. It is adding 250,000 kw at the new Barry steam plant and 150,000 kw at the new Gorgas Plant.

More Capacity Going on Line . . . With this additional capacity the system will have a total of 1,529,500 kw by the middle of 1955. By then it is expected energy requirements will be 7.5-billion kwhr a year. Since 1946 the company has installed 835,000 kw, all steam but 55,000 kw at Martin Dam.

Fortunate in owning its own coal mines at Gorgas, the company through mechanized and efficient operation of these properties has been able to save 20 to 25% on its coal costs. The company has ample reserves, and the new Alabama By-Products Corp mine will give it additional supplies. The $400,000 improvement program for Gorgas next year will increase daily production from 4,200 to 4,500 tons. Estimated 1953 production will be around 1,080,000 tons.



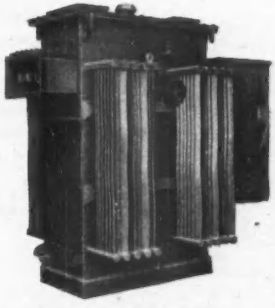
kva to help *L.S./M.F.T.*

To make fine cigarettes takes not only fine tobacco—it takes careful attention to the treatment and handling of the tobacco through every manufacturing step from start to finish.

Constant humidity control, for instance, is absolutely necessary. That's why it's important to the American Tobacco Company that the source of electric power (kva) for humidity control—and for all other operations—be as unfailing as possible.

In the Louisville, Kentucky plant of American Tobacco Company this source of power is a distribution system consisting of five load-centers equipped with Wagner Unit Substation Transformers. Seven Wagner Transformers are used in the installation.

Wagner Transformers are an important part of the equipment of many great industrial plants. In every case they are adding to their reputation for complete dependability . . . for unfailing service . . . that influenced American Tobacco to install Wagner Transformers.



Wagner engineers are qualified to specify the correct transformer for *your* requirements. Consult the nearest of our 32 branch offices, or write us.

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INDUSTRIAL BRAKES
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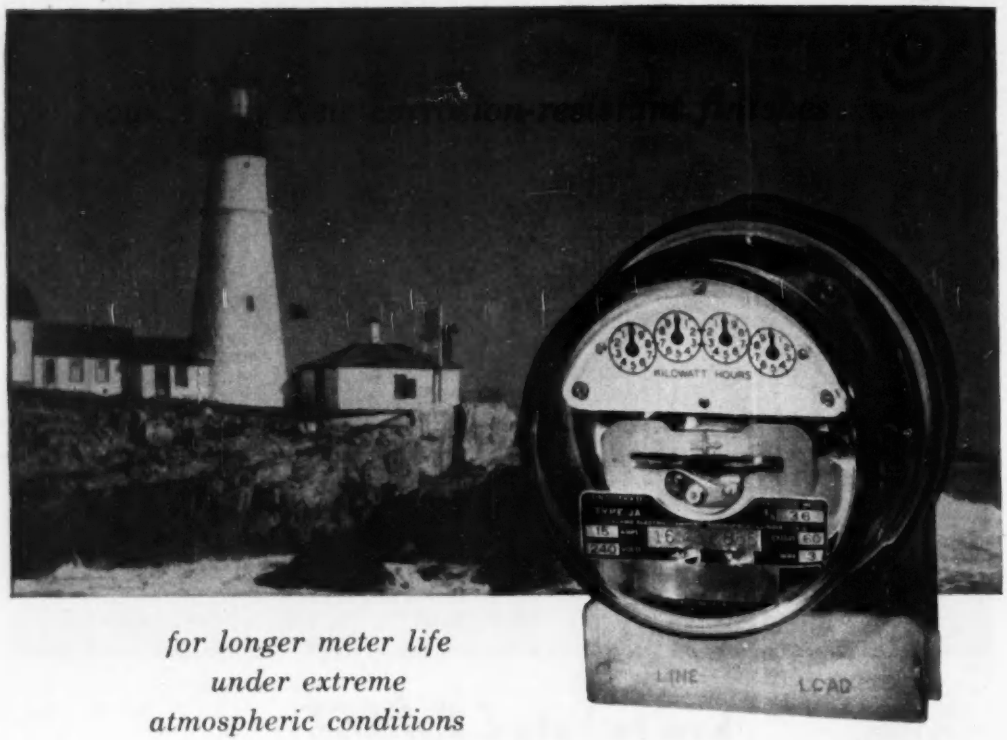
WT52-9



for longer meter life under extreme atmospheric conditions

Sangamo J Meters

Longer meter life—even under the most severe service conditions, is the subject of constant study and research at Sangamo.

As part of Sangamo's continuous program of improvement, new alloys and surface treatments are now incorporated in Type J Watthour Meters. All aluminum, copper alloy, and ferrous parts are treated with finishes proved most suitable for protection against attack from moisture and from air-borne organic and inorganic substances.

These finishes give greater protection to both external and internal meter parts and assure better performance in humid, salt-laden or corrosive atmospheres. This greatly extends useful meter life under extreme atmospheric conditions.

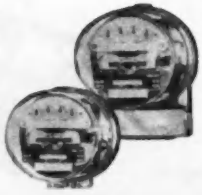
As new technologies develop, they will be used by Sangamo to still further increase the dependability and long life accuracy that the Utility Industry has a right to expect from the watthour meters they buy.

The full story of this new development is told in Sangamo Bulletin 201. Write for copies today.

Only Measured Facts are Known Facts

SANGAMO
ELECTRIC COMPANY
SPRINGFIELD, ILLINOIS

Sangamo J Meters have proved their ability to meet today's requirements and tomorrow's anticipated loads with sustained accuracy, economy of maintenance and troublefree performance.



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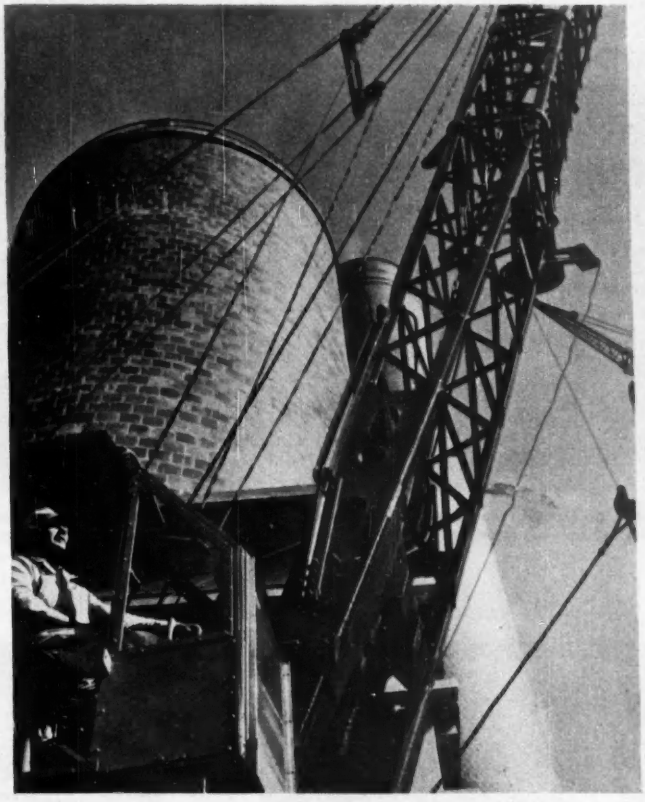


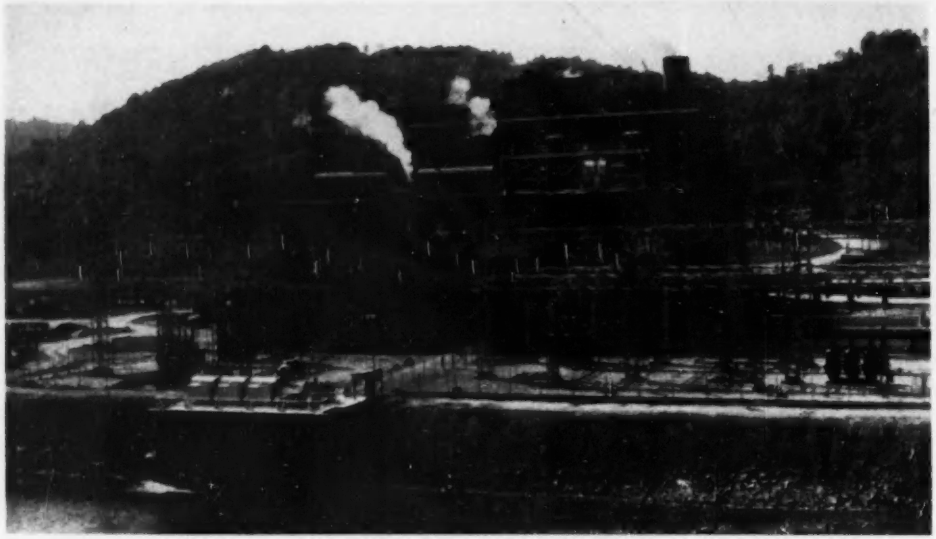
Best Dramatic Picture—Ed Peters, Charleston, W. Va.

Albright Plant Poses for Contest Pix

A Press Prevue, Sept. 27, of its new Albright power plant provided Monongahela Power Co with an opportunity to conduct a news photo contest. For one hour that day the photographers tramped the plant on a guided tour and snapped whatever caught their fancy. Within ten days six of the contestants thought they had prize winners. The pictures of the two that took the first place awards of $50 are shown above and on the following pages.

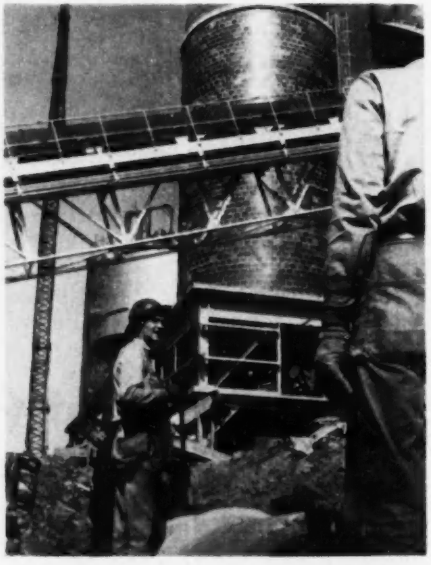
Albright Plant went on the line later in the day that the pictures were taken. It has a 75,000-kw unit which will supply power to the Monongahela Power Co. The second 75,000-kw unit will be ready by the end of this year or early next year. Its output will go to Potomac Edison Co, another West Penn Electric subsidiary. In 1954 a third 135,000-kw unit will be ready to supply Monongahela. The plant is on the Cheat River in West Virginia.

The contestants came from a group of 75 persons connected with the West Virginia Newspaper Council and the West Virginia Association of Scholastic Journalism



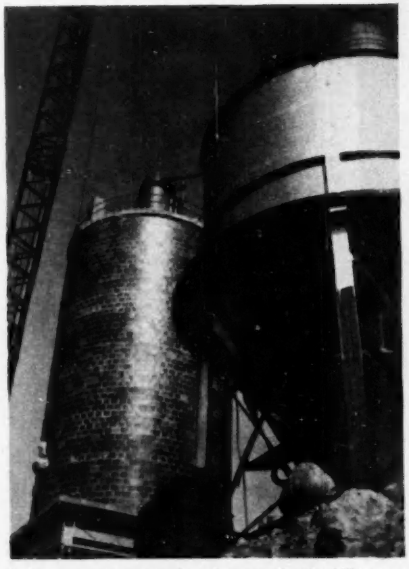
Here's the recipe for a miracle: Take the restless energy of coal, convert it into steam, and send the steam through a complicated maze of pipes and valves. The result: Electricity flowing out in every direction to work an endless shift

But first came the builders. And a shovel was there from conception to birth



A lot of men with many small jobs. The muscles of the giant would never have grown with even the ancient level missing

It's a powerful but gentle giant, possessing tremendous strength but bending obediently to the touch of a button or the turn of a dial. Proud technicians will direct this power



And now, running as steady and true as the plumblike crane weight hangs, the plant is carefully preened with countless final touches

←Best Picture Sequence

. . . of the Albright Plant was submitted by John L. Nall, West Virginia Industrial and Publicity Commission, Charleston. The captions are those submitted with the pictures

Directors. The former group includes practically all of the daily and weekly newspapers, industrial publications, and radio stations in the state.

The only information given the contestants was included in three brief talks: by Pres A Clinton Spurr on the company, by Plant Manager Carter B. Withers on the plant, and by William C. Handlan, manager of the Publicity and Advertising Department on the contest.

Two Classifications Set up . . . There were two classifications: One for the best picture story in a sequence of three to five pictures. The other for the best single dramatic shot. Three prizes of $50, $30, and $15 were offered in each classification. The company also reserved the right to buy any other pictures for $5 a piece. The winning pictures and those purchased were to become the property of the company for use in exhibits, advertisements, or publications of any type.

To select the winners the company secured a panel of New York City news photo experts. These were Murray Becker, chief photographer for the New York Bureau of the Associated Press; Harold Blumenfeld, editor of United Press Newspictures; and Charles Coiner, vice president in charge of the Art Department, N. W. Ayer & Son, Inc.

Some Pertinent Information For the Industry . . . In addition to the pictures and the publicity gained by the company, the contest provided the industry with some pertinent information:

- Equipment by itself has no interest. Each winning picture has life or action in it.
- News photographers have no conception of the part played by various pieces of equipment. The fly-ash collector was far more attractive to the contestants than the 75,000-kw generator. From pictures submitted in the contest one got the impression that the sole purpose of the plant is to provide fly ash and not electricity.
- Apparently because they do not carry sufficient lighting equipment, news photographers favor outdoor over indoor shots. Good outdoor lighting makes possible more dramatic shots. This accounts in part for the great use of pictures of public power projects in the Far West by popular magazines. It is the pictures of Grand Coulee Dam that get the play and not those of the interior of its powerhouse.

POWER BRIEFS

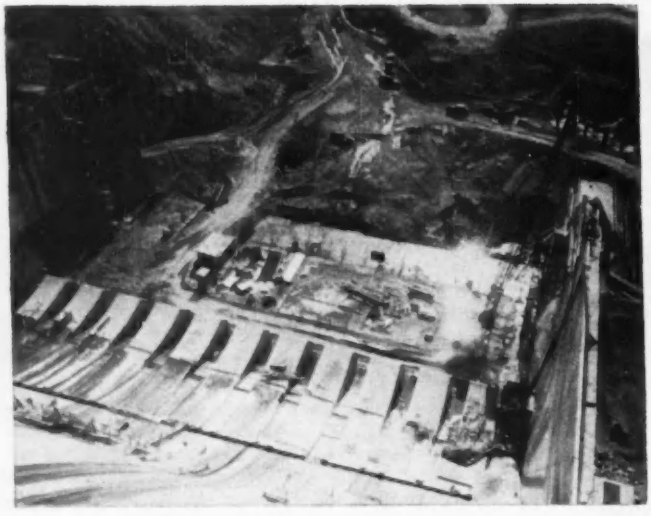
● The Navy has offered public utilities in the Northwest the use of two battleships to generate electricity in the power-short area. The two ships, part of the mothball fleet, are the USS Alabama and Indiana. Each can generate 6,750 kw. C. A. Erdahl, chairman of the Pacific Northwest Utilities Conference Committee, has passed the offer along to Federal Power Commission for consideration. He said it would cost about $100,000 to reactivate each ship.

● John Hanrahan of Public Service Co of Colorado's application department ran across one of those believe-it-or-not oddities recently when a house card for a Denver residence showed that a gas meter set in 1950 and an electric meter set in 1924 both had the same serial number—85807.

● New Orleans Public Service, Inc, has renamed its Industrial Canal power plant the A. B. Paterson steam-electric generating station in memory of the utility's late board chairman. At the recent re-dedication ceremonies Mrs. A. B. Paterson unveiled a bronze plaque commemorating the occasion. Paterson died last August.

● A. R. Sibson, city electrical engineer of Bulawayo in Southern Rhodesia, has discovered a way or ridding cooling dams at power stations of algae. Intense sunlight in Southern Africa makes algae a major problem. But by introducing bream into the cooling ponds, Sibson found that they devour the algae as fast as it forms since there is nothing else for them to feed on. This method is popular with the country's fishermen because when the ponds are drained a few thousand fish are transferred alive to fishing waters of angling societies.

● Boilers for Britain's first power station to have 100,000-kw turbo-alternators are now being built. Each unit will be driven by a single boiler. The units, to be installed in British Electricity Authority's new Castle Donnington station near Derby, each will generate 830,000 lb of steam per hour at a pressure of 1,600 lb psi and a steam temperature of over 1,000 deg F. Biggest standard-sized generators used by BEA up to last year were 60,000 kw. The authority has decided to build five of these new stations. The one at Castle Donnington probably will be the first to go on the line; a second is planned in Yorkshire to be in operation in 1956.



View for Sidewalk Superintendents

Hundreds of sidewalk superintendents will watch work on the Davis Dam stilling basin (above) during dedication ceremonies to be held Wednesday (Dec. 10) at the big Bureau of Reclamation hydro development. Davis, 225,000-kw project on the Colorado River between Arizona and Nevada 67 miles below Hoover dam, is the only Reclamation dam still to be dedicated. Reclamation Commissioner Michael Straus will make the dedicatory address after brief remarks by 11 western governors.

Sleet Storm Interrupts Service in North Dakota

About 55 towns in North Dakota served by Otter Tail Power Co were cut off from power when a sleet storm and high winds lashed the area two weeks ago. Damage to power facilities was estimated at $25,000.

Worst damage was suffered at Montpelier and vicinity. Ice on the lines with a diameter of six inches resulted in many line breaks. In a five-mile stretch from Dickey to a substation east of there, 53 breaks were counted.

The outage lasted 39½ hours at Montpelier but service was restored to most towns in a few hours.

CALENDAR

Interstate Power Club
Hotel Martinique, New York, Dec. 8.

Edison Electric Institute
Industrial Power-Heating Section, Jung Hotel, New Orleans, Dec. 8-9; Cost Management Program Subcommittee, Sheraton Hotel, Pittsburgh, Dec. 10-11; Home Service Committee, EEI Headquarters, New York, Dec. 11-12; Accident Prevention Committee, Hotel Muehlebach, Kansas City, Mo., Jan. 12-13, 1953; Transmission-Distribution Committee, Shoreham Hotel, Washington, D. C., Feb. 12-13, 1953; Electrical Equipment Committee, Jefferson Hotel, St. Louis, Mo., Feb. 16-17, 1953.

Institute of Radio Engineers
Joint Electronic Computers Conference with American Institute of Electrical Engineers, Park Sheraton Hotel, New York, Dec. 10-12; Joint High Frequency Measurements Conference with AIEE, Statler Hotel, Washington, D. C., Jan. 14-16, 1953.

***Canadian Electrical Association**
Eastern Zone: Engineering Division, Nova Scotian Hotel, Halifax, N. S., Jan. 15-16, 1953; Sales Division, General Brock Hotel, Niagara Falls, Ont., Jan. 22-23, 1953; General Division, Mont Tremblant Lodge, Mont Tremblant, Que., Jan. 29-30, 1953; Following Western Zone Division Meetings will be held at Palliser Hotel, Calgary, Alta: Engineering, Feb. 23-25; General Division, Feb. 25-26; Sales Division, Feb. 26-27, 1953.

American Institute of Electrical Engineers
Winter General Meeting, Hotel Statler, New York, Jan. 19-23, 1953.

National Rural Electric Cooperative Association
11th Annual Meeting, Civic Auditorium, San Francisco, Jan. 26-29, 1953.

***National Association of Corrosion Engineers**
Short Course in Corrosion in cooperation with University of California, Berkeley, Feb. 2-6, 1953.

Missouri Valley Electric Association
Industrial-Commercial Sales Conference, President Hotel, Kansas City, Mo., Feb. 5-6, 1953.

***Addition this week.**

NOW...L-M offers complete line of Secondary Racks –conforming with EEI specifications

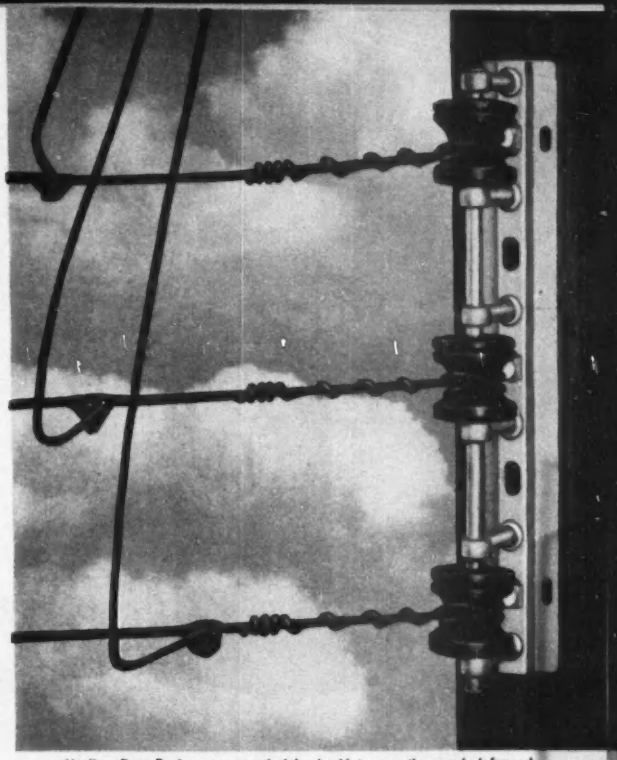
Medium and Heavy Duty Types feature forged-leg construction. Light Duty is riveted, pressed steel U type...all give greater strength, higher resistance to corrosion, neater appearance.

Your L-M Field Engineer is now prepared to offer you a complete line of Secondary Racks—with forged legs in the medium and heavy duty types.

These L-M racks fully conform to dimensional specifications and meet or exceed strength requirements outlined in EEI Specification TD-7. They are hot-dip galvanized. Edges are smoothly rounded to eliminate danger of damage to rope lines and conductors. The forged-leg design eliminates all pockets which would otherwise collect moisture and encourage corrosion when the racks are installed.

The L-M medium duty rack has ample strength for most urban construction, even in heavy loading districts. L-M heavy duty racks are recommended for use where construction standards require this superior strength.

L-M light duty racks are strong, well built, have curved steel backs and U-supports of 3/16″ steel.



Medium Duty Rack—non-extended back. Note smooth, rounded forged steel legs which eliminate moisture-collecting pockets.

Get Details and Dimensions

Specifications, dimensions and fully illustrated catalog sheets are available on all L-M Secondary Racks. Ask your L-M Field Engineer for copies of this material, or write: Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

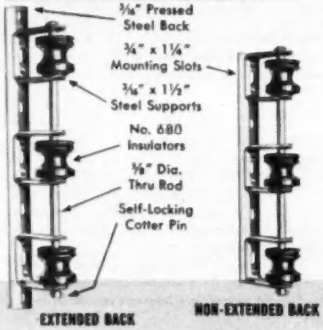
LINE MATERIAL

Line Construction Materials

Complete Coordinated Equipment for Distribution Today

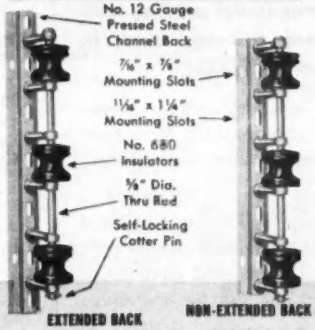
109

LIGHT DUTY



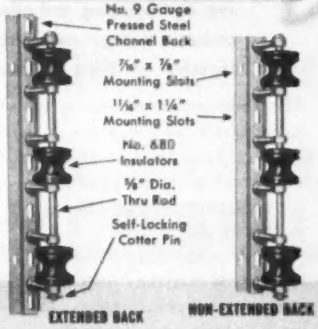
****2 Wire— 8 Inch**
****3 Wire— 4 Inch**
****3 Wire— 8 Inch**
****3 Wire—12 Inch**
****4 Wire— 8 Inch**

MEDIUM DUTY



***2 Wire— 8 Inch**
***3 Wire— 4 Inch**
***3 Wire— 8 Inch**
***3 Wire—12 Inch**
***4 Wire— 8 Inch**

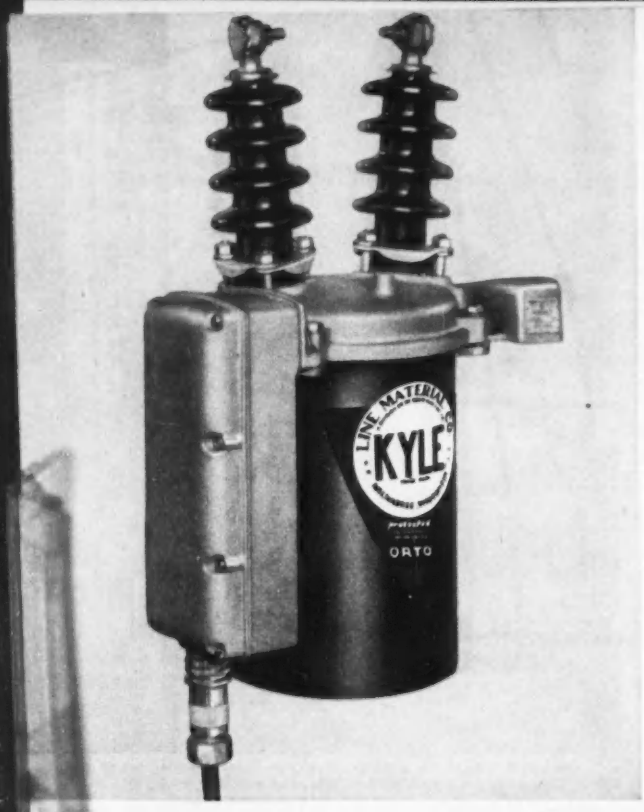
HEAVY DUTY



2 Wire— 8 Inch
3 Wire— 4 Inch
****3 Wire— 8 Inch**
****3 Wire—12 Inch**
****4 Wire— 8 Inch**

****E.E.I. Standard in Non-Extended Type only.***

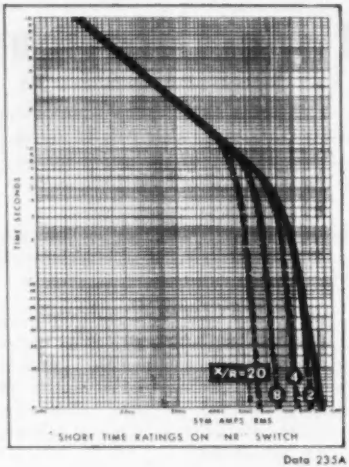
****E.E.I. Standard in both Extended and Non-Extended Types.***



L-M's Kyle Type "NR" remote control oil switch—the same switch used in L-M's switched capacitor racks.

"Field-Designed"—with the features users asked for.

200-amperes nominal load rating at 14.4 kv, 150 amperes for capacitor switching. 9000 amperes RMS asymmetrical momentary current rating.



"SHORT TIME RATINGS ON "NR" SWITCH

Data 235A

L-M Announces New Remote Control Oil Switch for Capacitor Switching

Here is L-M's new motor-operated 200-ampere remote control oil switch. It is specially designed for low-cost capacitor switching up to 3500 kvar 3-phase, but is equally suitable for street lighting, flood and airport lighting, protective lighting, sectionalizing, and other remote control switching applications. Ratings meet users' needs and requirements for capacitor switching and many other applications.

The contact structure is so designed that heavy currents increase contact pressure and give the switch high momentary and short-time current ratings. Spring-loaded contacts give very fast "make" and "break"—which eliminates restrikes and minimizes contact erosion when closing in on large capacitor banks.

The switch can be bolted directly to the pole, or crossarm with a thru-bolt or crossarm-mounted with a clamp-around hanger. Clips also available for mounting on substation steel structure.

Control motor requires less than one ampere at 120 volts, which permits the lightest wiring, simpler control circuit, and gives longer life for limit switches and relays.

Get Full Information

Ask the L-M Field Engineer for details on this new Type NR Switch—or write Line Material Co., Milwaukee 1, Wis. (a McGraw Electric Company Division).

Type "NR" Switch Ratings

SINGLE PHASE

VOLTAGE

Nominal	RMS 14.4 kv
Maximum design	RMS 15.0 kv
60 cycle, one minute withstand, dry	RMS 35.0 kv
60 cycle, ten-second withstand, wet	RMS 30.0 kv
1½ x 40 Ms impulse withstand, crest, BIL	95.0 kv

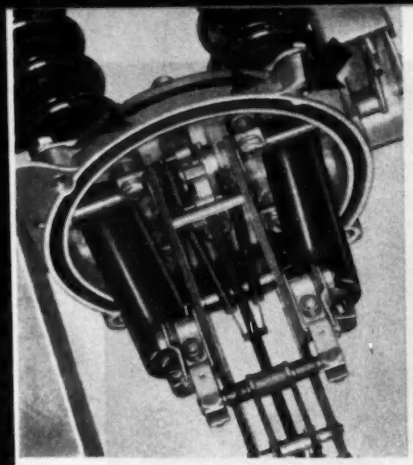
CURRENT

Thermal	200 amperes
Capacitor switching, nominal	150 amperes
Inductive load switching,	
75 to 100% PF,	200 amperes
50 to 75% PF,	100 amperes
Less than 50% PF,	50 amperes
Momentary, RMS Asymmetrical	9000 amperes
Short-time, RMS Symmetrical	
10 seconds	1400 amperes
1 second	4500 amperes

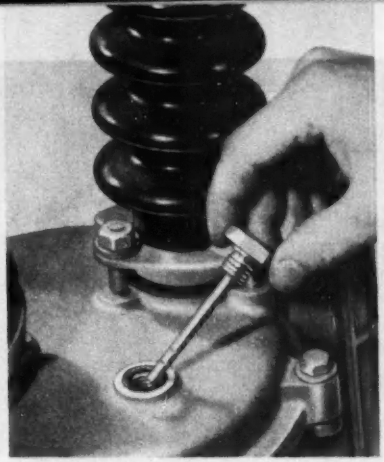
For larger ratings at shorter time intervals see curve, Data 235-A above.

CONTROL

Motor-operated actuator requires less than one ampere at 120 volts. Permits simplest control circuit and gives long life of limit switches and control relays.

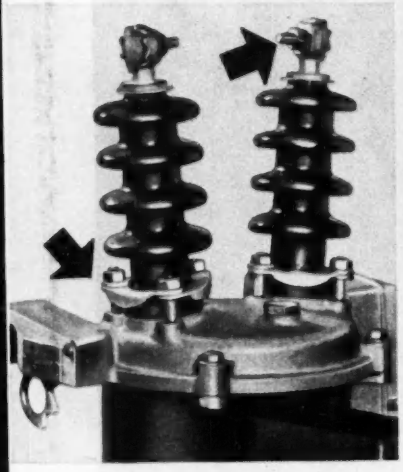


Head may be rotated and set at desired position. Lips in the groove on the underside of head hold the gasket so that it doesn't fall out when the cover is lifted.

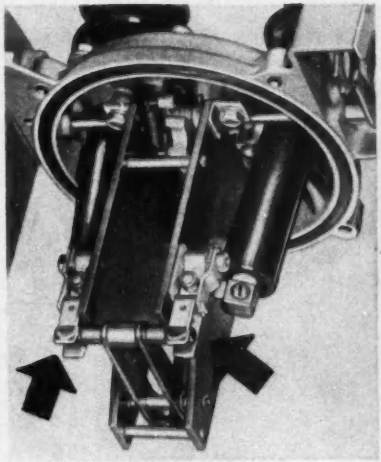


Oil dip stick on the head for checking the oil level. The tank holds 1½ gallons of oil. The inner mechanism is insulated from the tank by the oil and by a tank liner.

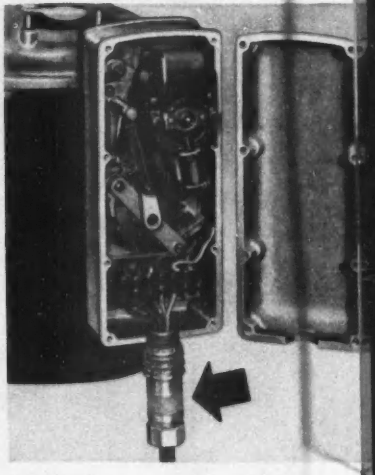
Heavy bracket for direct mounting to pole or crossarm with or without a hanger. Heavy tank, with inserted concave bottom, so that only the rim takes abrasion.



The bushings are the clamp-on type which make replacement easy. Bushings are oil-filled for lowest radio noise level. Plated Universal terminals for aluminum or copper conductor, No. 8 to 2/0.



Contacts arranged so heavy currents increase contact pressure, giving high momentary and short time current ratings. Spring-loaded contacts give quick make and break to prevent restrikes and minimize erosion.



Motor-operated actuator requires less than one ampere at 120 volts, permitting lighter wiring and simplest control circuit, and assuring long life for limit switches and relays. Weatherproof plug-in connection at bottom of box and weatherproof plug available.

CAPACITOR SWITCHING RATING

Voltage	Based on 25 KVAR Units				Based on 15 KVAR Units			
	Three-Phase		Single-Phase		Three-Phase		Single-Phase	
	Bank Size KVAR	No. of Units	Bank Size KVAR	No. of Units	Bank Size KVAR	No. of Units	Bank Size KVAR	No. of Units
2400	600	24	350	14	585	39	360	24
4160	1050	42	625	25	1080	72	615	41
4800	1200	48	725	29	1215	81	720	48
7200	1800	72	1075	43	1845	123	1080	72
12470	3225	129	1850	74	3240	216	1860	124
13200	3375	135	1975	79	3420	228	1980	132
13800	3525	141	2050	82	3555	237	2070	138

LINE MATERIAL

Kyle® Oil Switches

Like all Kyle reclosers, the Type NR switch is filled with ORTO®, L-M's oxidation-resistant transformer oil, inhibited for longer life.

Once again it is time to pause and count our blessings . . . time to express our gratitude for the treasured friendships we are privileged to enjoy . . . time to say "thanks" again to our many friends in the electrical industry for their confidence in Pinco products.

So from all of us, to all of you . . . our personal best wishes for a

MERRY CHRISTMAS AND A HAPPY NEW YEAR!

The Porcelain Insulator Corporation

PINCO INSULATORS

LIMA, N. Y.

Albright Named Executive VP

Detroit Edison advances veteran employee from post of vice president and treasurer. Porter, Landrigan are elevated

On Jan. 1 Arthur S. Albright, vice president and treasurer of Detroit Edison Co, will become executive vice president of the utility. Albright will succeed Paul W. Thompson, who will retire. Thompson assumed the executive post Dec. 1 when James H. Lobban retired.

In another appointment at the time Lobban's retirement was announced, George A. Porter was elected vice president in charge of engineering, construction, and operations to replace Thompson.

New Vice President . . . Detroit Edison has also appointed Charles R. Landrigan a vice president, effective Jan. 1. Landrigan, however, will continue his duties as controller. At the first of the year, Stewart L. Ferguson will succeed Albright as treasurer and Everett E. Roll and Elmer D. King will become assistant general accountant and assistant secretary, respectively.

Other appointments which became effective Dec. 1 included the following: Donald F. Kigar, assistant manager of purchases, assumed Porter's responsibilities as manager of construction; Marshall Pease, fuel supply director, succeeded Kigar; and Robert W. Lundgren replaced Pease in the director's post.

Began in 1912 . . . Albright joined Detroit Edison in 1912. He has served as superintendent of the meter department, head of the research department, and from 1943 to 1949 as controller. In 1949 he was made treasurer and earlier this year he was elected a vice president.

Porter, newly elected vice president in charge of engineering, construction, and operations, started with Detroit Edison in 1925. After working with the research and construction departments and at the Delray Power Plant, he was made assistant chief engineer of power plants in 1947. Two years later he became chief engineer of power plants and last January he was appointed the utility's manager of construction.

Worked at Delray Plant . . . Landrigan began with the Michigan utility in 1912 in the production department at the Delray plant. He spent some time in the construction department and then was transferred to the control department where he became assistant controller in 1932 and controller in 1949.

Thompson's career with Detroit Edison dates back to 1913 when he was an experimental engineer at Delray. In 1931 he was named chief engineer of power plants and in 1943 was elected a vice president.

When Lobban retired Dec. 1, he had completed 42 years' service with Detroit Edison. He was named secretary in 1945, vice president in 1948, and executive vice president in 1951.

•

Raymond W. Hurd, manager of West Penn Power Co's Northern Division at Kittanning, has been promoted to assistant to Pres P. H. Powers. In his new job, he will be located at the utility's headquarters at Pittsburgh. A 25-year veteran with West Penn, Hurd has filled the division manager's post since 1949.

James H. Foote has been named vice president engineering of Electrical Manufacturing Co, Battle Creek, Mich. Foote formerly was associated with Ethyl Corp and Holley Corp in a research and administrative engineering capacity.

Cyrus Stonehill has been named sales manager of the new ballast department added by the sales department of the Lighting Division of Sylvania Electric Products, Inc. Stonehill, who joined Sylvania in 1951, will make his headquarters in the ballast department's offices at Ipswich, Mass.

Frederick W. Argue has been made assistant engineering manager of Stone & Webster Engineering Corp, Boston. Argue, who joined the firm in 1941, has been assistant chief power engineer for the engineering consultative firm since 1948.

HERBERT E. CLIFF

New Jersey Utility Group Elects Cliff as Its Head

Herbert E. Cliff, general commercial manager of Public Service Electric & Gas Co, has been elected president of the New Jersey Utilities Association. He succeeds Howard B. Allen, vice president of New Jersey Power & Light Co.

The following officers were named at the association's 37th annual meeting held recently at Absecon, N. J., Earl Smith, president, South Jersey Gas Co, vice president; Wilson S. Meyers, director of public relations, Atlantic City Electric Co, secretary; and Hart T. Sweeney, secretary and treasurer, New Jersey Bell Telephone Co, treasurer.

Directors for three years: Emil J. Fricker, vice president, Hackensack Water Co; Vern Larson, vice president and general manager, Sussex Telephone Co; Watson F. Tail, Jr, vice president in charge of electric operations of Public Service; and John B. Rees, executive vice president, New Jersey Bell.

After graduating from Swarthmore College in 1924, Cliff started with Public Service. In 1940 he was appointed assistant general commercial manager and in 1949 was advanced to his present position.

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Brig Gen David Sarnoff, chairman of the board of Radio Corp of America, has been named the first recipient of the newly established Founders Award by the Institute of Radio Engineers, a society of radio engineers and scientists.

PUBLIC RELATIONS & ADVERTISING

All These and Electric Service, Too

R. G. Rincliffe, president of Philadelphia Electric Co, presents to Mr and Mrs Nicholas Nagurne, and their 5-year-old daughter, Nikki, 23 electric appliances valued at $3,000. Their electric meter brought the gifts as well as electric service to their new home at 1130 St. Vincent Street, Philadelphia. The meter happened to be the 1,000,000th installed by the company. Philadelphia Electric is now the seventh company to have so many meters on its lines.

Before the presentation the Nagurnes toured company properties including the Delaware Plant and the main offices. That evening, Nov. 18, they were the guests of the executive committee of the PE Employee Association at the Broadwood Hotel.

Nagurne is a paratroop veteran of World War II. He was awarded the Purple Heart, two Presidential unit citations, and seven battle stars.

AD COPY THEMES

Alabama Power Co—"Yes, Johnnie—That is a Mule!" is the headline on an ad pointing out that the mule is giving way on Alabama farms to the tractor. Sketch shows father holding up his young son on a fence to get a better view of the animal.

Consolidated Edison Co of N. Y. is continuing its series of news picture ads. Recent one showed fluorescent sidewalk lighting in front of one of the company's new electric distribution centers. Usually three pictures compose one ad insertion.

Montana Power Co—"Make Your Own Spring Weather" heads an ad boosting electric hot beds.

Pennsylvania Power & Light—"The Miracle of the Second Invasion of America" is headline for an ad based on the American Economic Foundation's "Why Did It Happen Here?" The ad was repeated on bulletin boards and display window posters. Reprinted in booklet form nearly 100,000 copies were distributed to employees, civic and business leaders, and the public.

Philadelphia Electric Co—Four color ad in national magazine and black and white in three New York newspapers plays up Greater Philadelphia as a site for business and industries.

Southern Co—"Southern fibers clothe the nation!" tells of the rapid development of the southern textile industry. Copy is inserted in a background of cloth patches.

West Penn Electric Co—"Some of our best customers are people" is the headline for an ad telling how steadily residential load is growing in contrast to industrial load which varies more.

Georgia Power Reveals Home Town Winners

Statesboro, Alma, and Leary were first place winners in the fifth annual Champion Home Town Contest conducted by Georgia Power Co. Alma also took the $1,000 sweepstake award in a special contest open only to first place winners in the 1951 and 1952 contests. There were 279 towns in the contest. Prizes will be presented early next year at a series of dinners.

Winners in each class follow:

3,000 to 20,000 population—Statesboro, Pelham, and Douglas.

1,000 to 3,000 population—Alma, Sylvester, and Hinesville.

Under 1,000 population—Leary, Nicholls, and Menlo.

Each of the first prize winners will receive $1,000, of the second prize winners $750, and of the third prize winners $500.

The Answers Are Ready

The fifth edition of "I Want to Know About the Electric Industry" is now available for distribution. This 40-page booklet is published annually by Edison Electric Institute to make available in compact form the answers to the questions most commonly asked about the industry. This year's booklet answers 27 such questions. Copies are available from Edison Electric Institute, 420 Lexington Avenue, New York 17, N. Y. Prices run from 25¢ for a single copy to 8.7¢ per copy in lots of 10,000 or more.

PR&A BRIEFS

Carolina Power & Light Co will include a division for farmers in its second "Helping to Build a Finer Carolina" contest. Basis for judging will be achievement in conservation practice . . . **Consolidated Edison Co of New York** will have a "Utility Analysts Day" on Dec. 11 for the New York Society of Security Analysts . . . **Bozell & Jacobs,** 2 West 45th St, New York 36, N. Y., is distributing the new PIP posters for employee bulletin boards . . . **General Public Utilities** companies are having a contest among employees to get a file of colored slides of company and customer properties and activities.

Rome RoZone®

Superior Ozone-Resistant Insulation Deserves Your CONFIDENCE

What Ionization Testing of RoZone Means to You

Q: What is ionization?
A: Ionization is the electrical breakdown of air.

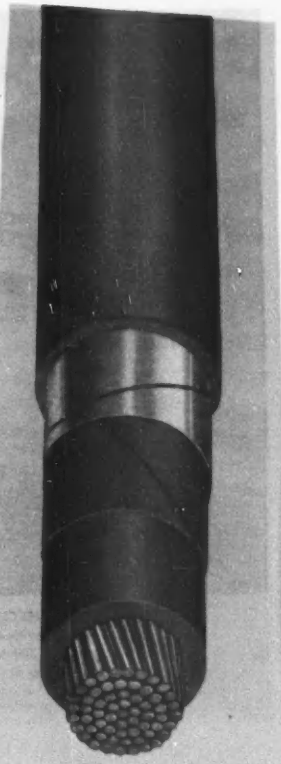
Q: Where can ionization occur in electrical wires and cables?
A: It can occur internally and externally unless preventative measures are taken.

Q: What are the bad effects of ionization?
A: a) Reduced dielectric strength.
b) Increased dielectric losses.
c) Possible reduced life.

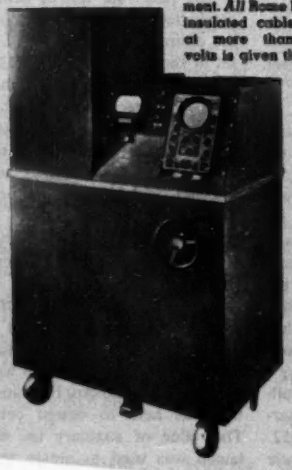
Q: How can ionization be determined?
A: By corona level measurements as described in AIEE Transactions, Volume 67, 1948. (A copy of this article will gladly be sent to you on request.)

Q: How can you prevent ionization?
A: By proper shielding methods and rigid manufacturing techniques and controls.

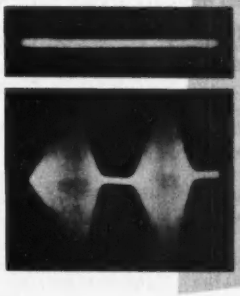
Every foot of RoZone insulated cable rated at 1000 volts and over is subjected to ionization testing as a standard manufacturing control. This predetermination of cable behavior under actual service conditions assures you of uniform performance, as well as maximum freedom from the effects of ionization.
Here is another reason why Rome RoZone deserves your confidence. For complete information send for the Rome Power and Control Cable Catalog. It's yours for the asking.



500,000 CM stranded single conductor RoZone insulated, shielded, RoPrene sheathed power cable . . . 15,000 volts, grounded neutral.



This specially designed instrument is used to test ionization level of cable just prior to shipment. *All* Rome RoZone insulated cable rated at more than 1000 volts is given this test.



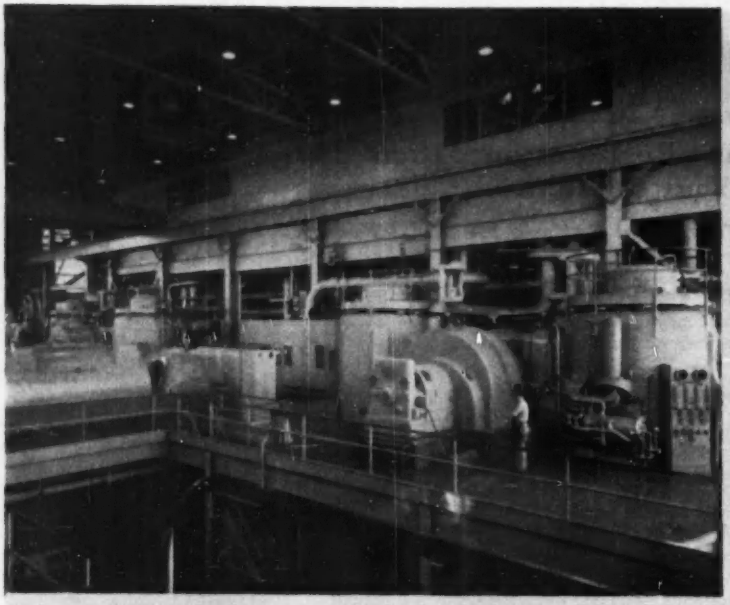
The upper oscilloscope trace shows no ionization. Trace shown below indicates ionization point.

It Costs Less to Buy the Best

RoZone is approved and accepted by leading utilities, industrials and consulting engineers

ROME CABLE
Corporation
ROME · NEW YORK
and
TORRANCE · CALIFORNIA

ROME CABLE ROME, N.Y.



COORDINATED MERCURY-STEAM UNITS at Schiller include the two 7,500 kw mercury turbines and condenser boilers in right foreground and far left with a 25,000 kw 600 psi 825 F steam turbine between. Newest 40,000 kw 1250 psi 950 F steam addition is out of picture to left

How Schiller

Generation

☛ ☛ ☛

Availability

☛ ☛ ☛

Schiller Mercury-Steam Station Sets

Pioneer co-ordinated mercury-steam plant of New Hampshire utility is said to be the most efficient fuel-burning station of its size in the world today

WILLIAM NOYES, Operating Engineer, Public Service Co of New Hampshire

In its first 24 months of continuous operation Schiller Station, the world's first co-ordinated mercury steam power plant, has set a new efficiency record. Guaranteed thermal efficiency of the mercury-steam unit was 9,211 Btu per net kwhr at 43,170 kw design rating when burning oil and 9,400 Btu on coal. Nameplate rating of this installation is 40,000 kw; demonstrated capability 48,000 kw.

Undoubtedly the most efficient fuel burning station of its size in the world, Schiller Station has been one of the factors that permitted Public Service Co of New Hampshire to cut the net heat rate of its fuel-burning stations from 19,016 Btu per kwhr in 1946 to 10,893 in 1951, an improvement of nearly 43%.

During a 24-hr test the mercury steam unit at Schiller showed an efficiency on oil of 9,133.7 Btu per net kwhr. In July of last year, the average overall heat rate per net kwhr was 9,168 Btu, with an average load for the month of 46,622 kw and a maximum of 48,500 kw. In spite of steam turbine troubles, mentioned later, the net heat rate for the entire year was 9,379 Btu per net kwhr on an average load factor of 69.5% and a peak hour of 50,000 kw.

A second 40,000-kw unit-type all-steam addition went into regular service at Schiller on October 14, 1952. It employs a conventional steam cycle at 1,250 psi and 950 F. A similar steam unit is scheduled for service in mid-summer of 1955 and will bring the plant's total rating is about 137,000 kw.

The heat rate test at Schiller was conducted in such a manner as to test the entire plant as a unit. Load was set at the design rating of 43,170 kw and held for 24 hours. All other items, such as voltage, power factor, back pressure on the steam unit, etc, were held to design values with a tolerance of ± 1%. Fuel oil was very carefully weighed, and electrical output measured on calibrated meters. Heating value of the fuel oil was determined from a composite sample taken hourly during the run.

During the test, no restriction was placed on station lighting or the use of the station service elevator. Following the test, another run was made during which auxiliary light and power use was held to design conditions. The value of auxiliary use thus obtained was used to obtain the gross output of 43,179 kw to determine the station net heat rate of 9,133.7 Btu.

Station Performed in 1950 and 1951

	Mercury Mwhr	Steam Mwhr	Total Mwhr	Net Output Mwhr	Max. Hour Kw	Plant Net Load Factor
1st Half 1950	30,676	52,668	83,344	78,698	45.900	39.5%
2nd Half 1950	59,008	98,635	157,643	150,659	47.000	72.6
Year	**89,684**	**151,303**	**240,987**	**229,357**	**47.000**	**55.7%**
1st Half 1951	50,939	86,564	137,503	131,442	50.000	60.5%
2nd Half 1951	67,490	113,306	180,796	173,191	48.700	80.5
Year	**118,429**	**199,870**	**318,299**	**304,633**	**50.000**	**69.5%**

	No. 1 Mercury Unit		No. 2 Mercury Unit		Steam Unit = Plant	
	Service Hours	Availability	Service Hours	Availability	Service Hours	Availability
1st Half 1950	2,500	57.6%	2,136	49.2%	3,547	81.7%
2nd Half 1950	3,689	83.5	3,708	83.9	3,787	85.7
Year	**6,189**	**70.6%**	**5,844**	**66.7%**	**7,334**	**83.7%**
1st Half 1951	3,309	76.2%	3,297	75.9%	3,397	78.2%
2nd Half 1951	4,062	92.0	3,886	88.0	4,144	93.8
Year	**7,371**	**84.1%**	**7,183**	**82.0%**	**7,541**	**86.1%**

NOTE: This table does not include approximately 225 hours in 1951 when one or the other mercury units was disconnected from the line due to lack of market for its load.

Record In First Two Years

This probably marked the first use of this type of procedure to determine over-all thermal efficiency.

In Electrical World of March 27, 1950, Page 99, design features of Schiller Station were described by H. D. Resseguie, chief engineer of Public Service Co of New Hampshire. This article pointed out that there are two mercury boilers and that all steam is furnished by mercury condenser boilers, and that there are two 7,500-kw mercury turbine units and one 25,000-kw steam turbo-generator. With this setup topping kilowatt hours are obtained at approximately the mechanical equivalent of heat, say 4,000 Btu. Through the use of mercury in the binary cycle it is possible to get approximately twice the number of 4,000 Btu kilowatt hours as can be obtained with a conventional steam topping cycle.

Control Centralization . . . With the exception of electrical switching, complete operating control of the plant is from a single centralized control room. Once the generators are phased, the control room operators are in complete charge. Each operating shift, of which there are four, consists of a watch engineer, two control room operators, one switchroom operator, and two auxiliary attendants: a total of six men. The remainder of the force is made up of electrical and mechanical maintenance men, an instrumentation man, a chemical analyst, a clerk, and a storekeeper. Including supervisory forces the total station crew for oil firing consists of a total of 35 men to cover all shifts. It is expected that operation on coal will require five more men, or a total force of 40.

Minor Changes Required . . . Mercury unit No. 1 and the steam unit began operation in late November, 1949. Operation was continuous from mid-December, 1949, to mid-January, 1950, when mercury unit No. 2 went into service. From experience gained in this preliminary operation certain modifications were made during the first six months of 1950. During most of this period, however, one, and at times both, mercury units were in operation.

Early in July, 1950, the changes were completed, and on July 12 the station load was set at the design rating of 43,000 kw. On July 17 the load was increased to 46,000 kw. The plant was operated at this point until the Labor Day weekend except for about four hours late in July when mercury turbine No. 1 was taken off the line for inspection. During August, 1950, the average load on the plant was just under 46,200 kw, with a peak load of 46,600 kw. For that month the load factor was 99%.

Steam Turbine Trouble . . . After the Labor Day shutdown the plant was again run at 46,000 kw until Oct. 15 when vibration was noticed in the steam turbine. This did not appear excessive but was sufficient to warrant an investigation. As the steam unit was coming to rest, it was obvious that the situation was critical, and on lifting the turbine casing it was found that

four buckets in the blading of the 14th stage had failed.

The approaching Christmas peak made it desirable to get the plant back into operation as soon as possible; so 14th stage buckets were completely removed and the turbine closed up. The station was again in service by Nov. 1 carrying a load of 43,000 kw until the end of February, 1951, when hydro conditions permitted the plant to be shut down for annual overhaul and to have 14th stage blading replaced.

In early operations it appeared that the deposit of solids in the steam circulating system was excessive. These accumulated in the steam superheater tubes and on the steam turbine buckets. During the overhaul period in March, 1951, the superheater tubes were thoroughly acid-cleaned. This cleaning, together with modifications in the feed water treatment have relieved this problem to some degree. At present the station is being operated at a base load of 46,000 kw.

Handling Mercury Boilers . . . In the early days of mercury boilers trouble was experienced in obtaining satisfactory heat transfer between the boiler tubes and the mercury in the tubes because pure mercury does not adhere to oxides on the surface of iron and steel. Research showed that if small amounts of titanium and magnesium are added and all oxygen excluded, the resulting amalgam wets the inside of the boiler tubes and permits good heat transfer. Moreover, the amalgam protects boiler steel against mercury attack.

Magnesium reacts with any metallic oxides present as well as with any oxygen which may leak into the system and removes the oxygen in the form of magnesium oxide. This is extremely insoluble in mercury and is carried around in suspension until it settles out in a quiescent area. It causes no trouble if prevented from collecting in a critical spot where the formation of a magnesium plug would be detrimental.

When a mercury boiler is taken out of service the vapor spaces must be filled with an inert gas, such as nitrogen, to prevent the formation of oxides. But even with this precaution a tendency was found at Schiller for plugs to form in the boiler tubes, causing a restriction to circulation and overheating. In a cold boiler the mercury level is at the bottom of the drum or even somewhat below it. Even if the vapor space is blanketed with nitrogen there remains a tendency for entrained oxides to float to the top of the mercury column in the boiler tubes.

When starting a boiler it is important to supply sufficient heat to start circulation rapidily in order to minimize the possibility of baking into solid plugs such oxide accumulations as may have been formed. To minimize this exposure it is the present practice to drain the mercury from the boiler into the storage tank in the basement as soon as possible after the boiler is off the line. Any oxides suspended in the mercury float to the surface in the tank where they can be handled and do not collect in the boiler tubes. During the time the boiler is idle, it is blanketed with nitrogen.

Starting Procedure . . . In starting a boiler it is first filled from the mercury storage tank, and the fires lit. It takes three to four hours for the mercury to heat to the point where circulation begins. The mercury turbine can then be warmed up and its generator attached to the mercury turbine phased to the system at very light load. In the process steam is generated in the condenser boilers in sufficient volume to warm up the steam turbine. As soon as this unit is phased, the mercury turbine is taken up to its minimum load of about 2,000 kw. This produces enough steam to carry about 5,000 kw on the steam unit or 7,000 kw on the whole station. With two mercury units in service the minimum plant load is 14,000 to 15,000 kw. Elapsed time from lighting the first boiler to full load on the plant is about 12 hours.

One of the most important instruments in the control room is the tube scanner. It records the temperature of every boiler tube at 45-minute intervals. Any deviation from normal temperature is picked up by a thermocouple and recorded on a chart. Deviations from normal mean changes in circulation. Since local overheating might result in tube failure and loss of mercury, an alarm is sounded if a tube reaches 1,100°F. If this occurs immediate steps are taken to reduce boiler load and if necessary remove the boiler from service.

In addition to the tube scanner two types of mercury vapor detectors monitor the furnaces at all times. These are so sensitive that 0.5 cc of mercury thrown into the furnaces for test purposes will send the detector needles off scale.

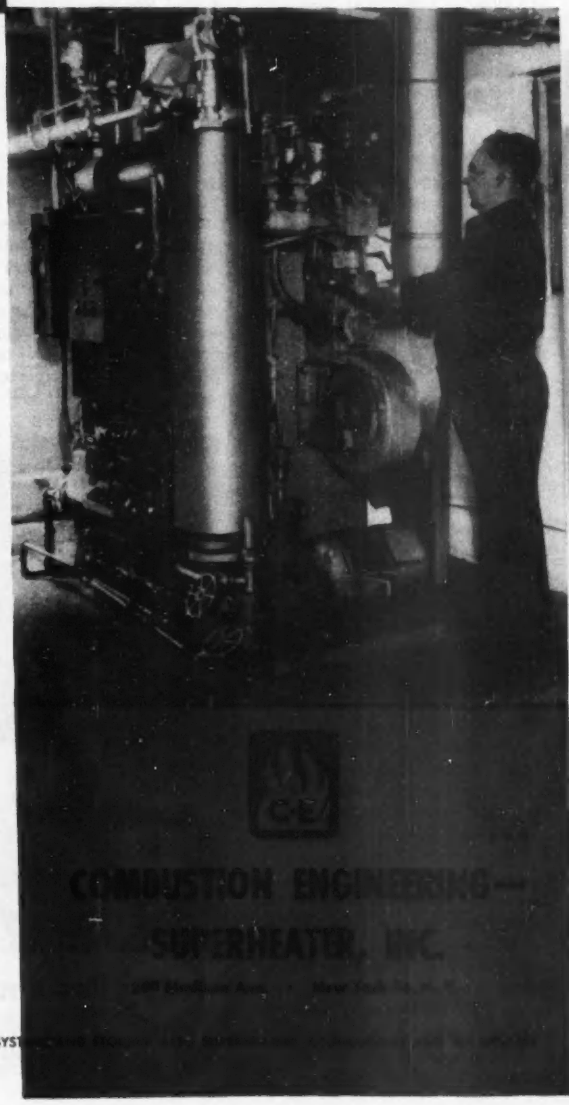
Minimum Load Limitations . . . During times when system hydro power is plentiful, minimum load limitations introduce some relatively minor problems because even low-cost binary cycle power cannot compete with dump hydro power. This, however, is a phase which will disappear when the valleys in the system load curve call for fuel-generated electricity in substantial amounts even with optimum water. Meanwhile it has been demonstrated that it is possible to take a boiler out of service for a short time, say from Saturday midnight to Sunday midnight, even though it is against all instincts of operating men to shut down a boiler running around 1,000F, cool it off for a short time, and then put it back to work. Further study will be needed to determine how much flexibility can be obtained.

Under normal conditions the two mercury turbines, unlike conventional steam turbines, operate with wide open stop and control valves. Electrical output of the mercury turbine generators is regulated by adjusting the pressure at the mercury boiler drums. The steam turbine responds to the steam produced from the reiected heat in the exhaust of the mercury turbines. The quantity of steam so produced is sufficient to produce from the steam turbine approximately 65% of total plant output. Under these conditions, it must follow that the output of the entire plant is regulated by the drum pressures of the mercury boilers.

In the foregoing discussion of operations, the items mentioned are those which differ from conventional practice in a steam plant operating at 600 psi and 800F. In dealing with mercury many ideas learned in steam plant operation must be revised. For example, the vertical centrifugal mercury boiler feed pumps are each driven by a 200-hp motor and handle more than 1,000,000 lb of liquid mercury per hour with an impeller only 9 in. in diameter. Another peculiarity is that check valves in liquid mercury lines must be installed upside down so they will float shut.

The accompanying table shows in summary, that the plant was available 84% of the time in 1950 and 86% of the time in 1951, including planned outages.

a small steam unit for big power stations



Here is a small steam generating unit that is ideally suited to the special requirements of large steam power plants, particularly new stations. Among its applications are these...

For space heating needs
during construction and in some cases in completed plants

For steam to evaporators
initial starting-up or supplementary make-up

For preheating oil

For standby plants
heating and service to auxiliaries

For outdoor plants
heating and various special requirements

For various other applications
such as heating water for acid cleaning of boilers

The C-E Re-circulation Steam Generator is an exceptionally compact, efficient, fully-automatic unit capable of providing up to 6000 lb of steam per hr at pressures up to 300 psi. It has numerous advantages among which the most important are:

(a) Requires a space only 7 ft. x 7 ft. by 7 ft. high

(b) Fully automatic-push-button control — minimum attention

(c) Delivered fully assembled; requires no special foundation; only a simple vent instead of a chimney

(d) Can be brought from "cold" to full capacity and pressure in a matter of minutes

(e) Can be operated continuously or intermittently, at full capacity or at low load, as desired

(f) Easily moved from one location to another; no need for long, expensive pipe lines to meet temporary demands for steam

If you have any one or a combination of these requirements — your best bet is the C-E Re-circulation Steam Generator. It's more than a package boiler — it's a complete steam plant including all controls and auxiliaries — a fully integrated unit. Investigate this unit before you buy any boiler in its capacity range as an auxiliary steam source.

B-536

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYST

INDUSTRIAL RELATIONS

Labor Changes in Capital Due

Taft-Hartley Act will be revised; little other legislation expected. Agencies will feel impact of GOP victory

Congressional labor committees, the Labor Department, and the Federal Mediation and Conciliation Service will be the first in Washington to feel the impact of the recent Republican victory.

The Wage Stabilization Board is an emergency agency. It will not be around long. If the coal case doesn't break up WSB, Congress may abolish it before the scheduled demise April 30.

Taft-Hartley Law to be Revised . . . Little labor legislation will come out of this Congress. Only good bet is that Taft-Hartley will be revised, and not as much as it would have been changed three years ago. At that time Sen Robert A. Taft made some concessions to get enough votes to put 28 amendments through the Senate. His re-election in Ohio the next year was at stake. Now, with longer experience under the law and the Republicans in the majority, less change can be expected.

One amendment already has been made in Taft-Hartley: Union shop polls have been discontinued. Another, which passed the Senate this year, would facilitate union shop contracts in the construction industry. It has a good chance, although one part of it may be dropped: Setting aside, for this industry alone, the union shop bans operating in some 18 states, mostly in the south. Southern Congressmen won't go for this.

Probably nothing will be done about the procedure for handling national emergency disputes, unless the country is faced with a big crisis, maybe in coal. Taft prefers to let Congress step in if an 80-day injunction fails.

Possible T-H Changes . . . These are some of the Taft-Hartley changes Taft has in mind:

- NLRB—enlarge it from five to seven members. (This gives General Eisenhower two appointments, one of whom he could make chairman.) Make it bipartisan. (This would open up one or two more appointments, giving Eisenhower's choices a majority.) Make the general counsel more independent of the board members. Taft proposed these changes in 1949 and in a reorganization bill in 1950. Chairman Paul M. Herzog would probably resign if he could not stay as chairman. This would facilitate the turnover of Democratic appointees.
- Non-Communist Affidavit—extend it to employers as well as union leaders. Eisenhower goes along on this.
- Secondary Boycotts—tighten the curb so that it will apply to union pressure brought on secondary employers as well as on their employees; relax it so that it will permit employees to refuse to do work that has been shifted from a struck plant, and eliminate the rule that NLRB must seek an immediate injunction in every secondary boycott situation.
- Economic Strikers—remove the prohibition against voting by economic strikers who have been replaced. Eisenhower cited the ban on voting as a possible union-busting weapon. Taft says the fear is "imaginary," but still thinks this change desirable.
- Welfare Funds—put employee welfare funds to which employers contribute under supervision of the Department of Labor.

There are some Republicans and Southern Democrats in Congress who want to make Taft-Hartley tougher and, particularly, to ban industry-wide bargaining. But Taft isn't listening to them. He recognizes that the Republican control of both sides of the Capitol will be very narrow. He doesn't want to lose in the next election.

LABOR BRIEFS

Philadelphia Regional Wage Stabilization Board has approved 7½% general wage increase for 6,176 workers at Philadelphia Electric Co. The pay boost, averaging 14¢ an hour, is retroactive to June 1. The decision supplements a regional board interim approval of Oct. 3 approving a 4% increase.

Meany Becomes AFL President

Dan Tobin (left), vice president of American Federation of Labor, congratulates George Meany after he became president of AFL, succeeding William Green deceased. A chair draped in mourning for Green is beside Meany.

SAVE MAN HOURS—REDUCE OUTAGES

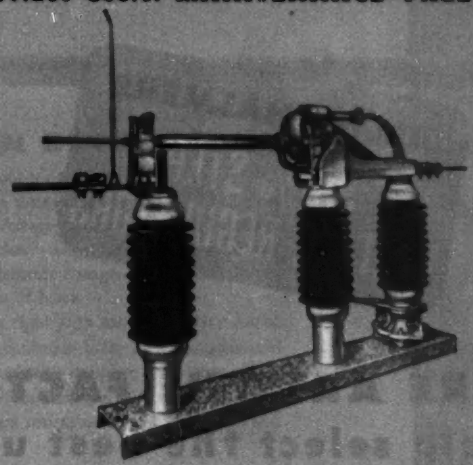
With the NEW KEARNEY

Group Operated

Rotating Insulator Type

DISCONNECT SWITCH

provides Cooler MAINTENANCE-FREE Operation



Any unit that helps keep the meters turning and reduces the man hours required to keep it operating is worth investigation by *any* power company.

Here are just a few of the advanced design features that make this switch so desirable today. (For more detailed information write for bulletin 8-33.)

1. Heavy beryllium copper spring contacts with silver overlay at *both* ends of blade.
2. Fully adjustable to compensate for any changes in switch mounting structure.
3. Positive current path to blade through blade contacts at *both* ends of switch.

With this switch dependable performance under every variety of weather and operating conditions is assured.

JAMES R. KEARNEY CORPORATION

4224-42 Clayton Avenue • St. Louis 10, Missouri

Canadian Plant: Guelph, Ontario

JAMES R. KEARNEY CORPORATION ST. LOUIS, MO.

KEARNEY Gives a Little More for a Little Less Through Engineering

Which Voltage is Best for Your

HERE ARE THE FACTS
to help select the best unit

ONLY 32-STEP VOLTAGE REGULATORS can give the accuracy you need for high system profits. Only their small ⅝% increments can keep your voltage within ± 1 volt limits. Now the only question is: "Which 32-step voltage regulator is best for my distribution system?"

A complete line of 32-step regulators for every voltage need is the Allis-Chalmers answer to this question. The advantages of the three different Allis-Chalmers regulators are outlined below, but *every* Allis-Chalmers ⅝% step voltage regulator gives you these features: a narrow ± 1 volt band, 20% range of regulation, long-life contacts, the *Feather-Touch* control feature, and unit construction to assure highest quality workmanship plus long, trouble-free service life.

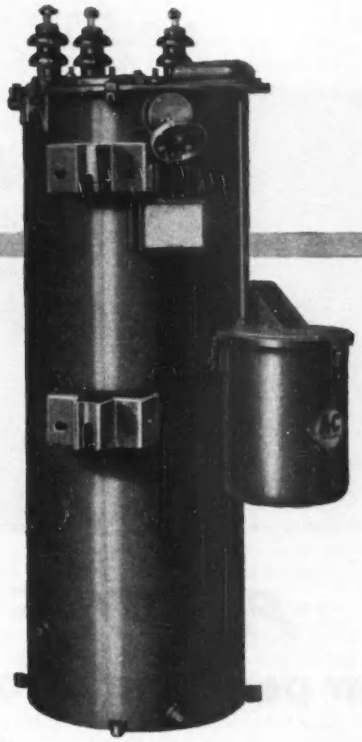
TWENTY YEARS' EXPERIENCE

Only Allis-Chalmers brings you the advantage of twenty years of ⅝% step regulator experience. You can get complete information on any of these units by calling your nearest A-C district office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3880

Vari-Amp is an Allis-Chalmers trademark.

ALLIS-CHALMERS

Regulator System?



DISTRIBUTION REGULATORS

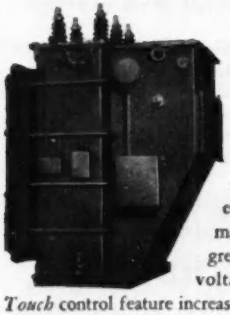
Here is the modern, flexible tool for solving your voltage regulating problems. Allis-Chalmers distribution regulators offer great new possibilities in bringing voltage regulation to a wide variety of applications. The cost is low. They are easy to mount and simple to maintain. If requirements change, they can be shifted to other lines with a minimum of labor.

Field-testing during the past eight years has proved the value of Allis-Chalmers distribution regulators both in substations and feeder lines. You can use them with complete confidence. They bring all the advantages of Allis-Chalmers 5/8% step regulators plus savings in installation and maintenance that add up to real profits on any system.

RATINGS AVAILABLE

7620 Volts—15, 50, 100 amp
5000 Volts—50, 100 amp
2500 Volts—100, 200 amp

THREE-PHASE POWER REGULATORS



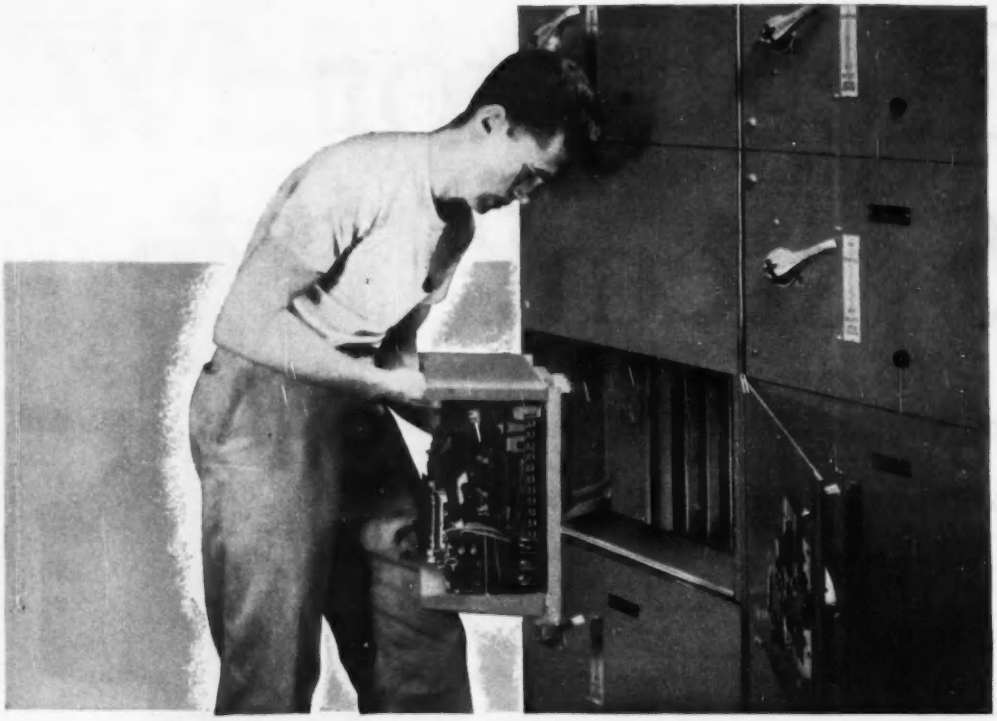
Three-phase power regulators are available in sizes through 69 kv, 2500 kva. In units of 15 kv and below, unit construction results in 78 fewer bolted connections, simplifies maintenance. All Allis-Chalmers 5/8% step regulators are equipped with long-life contacts made of arc-resisting metals for greatly reduced deterioration. The voltage integrator and *Feather-Touch* control feature increase accuracy and reliability under a variety of load conditions.

SINGLE-PHASE POWER REGULATORS

Single-phase power regulators, available in sizes from 2400 volts to 6900 volts, 12 kva to 69 kva, bring all the advantages of Allis-Chalmers 5/8% step regulators plus the *Vari-Amp* adjustment feature, which provides five current ratings instead of the two provided on other types of regulators. As loads increase, ranges can be reduced in proportion — they don't have to be sliced in half.

The *Vari-Amp* adjustment feature also increases short circuit capacity. In addition, adjustment is greatly simplified because one man can change ratings in less than thirty seconds. No taping, bypassing, or changing connections is needed.

Originators of 5/8% Step Regulation



POSITIVE SAFETY

for personnel...for equipment

Another reason why most control center buyers specify WESTINGHOUSE

Every time a man works with a Westinghouse Control Center he does so with complete freedom from danger. He knows that every design precaution has been taken to make his task a safe one.

He knows that when he tilts out a starter unit, it is completely disengaged from the power buses. He knows that when he removes a unit, the unit door remains on the structure to close off the hot buses. He knows that when he replaces the unit, the guide rails align the Magna-Grip® stab connectors so that engagement with the buses is positive every time. He knows that each starter unit is completely enclosed and has grid-type baffling which prevents spread of ionized gases to adjacent units. He knows that all current interrupting components have been tested at the Westinghouse High Power Laboratory to prove their unfailing performance.

Call your local Westinghouse office for the services of an application engineer. He will work with you to figure out the best combination of control center components and structures to handle your job. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-27024

YOU CAN BE SURE...IF IT'S
Westinghouse
CONTROL CENTERS

Future of the Electric Fire— Where the Critics Are Wrong

by A. W. MOSS

• To give Electrical World readers an idea of the electric house heating situation in Great Britain, this article is reprinted from the August 29 "Electrical Review", London, England. Electricity is short there and the supply authorities are much worried about the growing house heating load. Perhaps we should say the "warming" load, as the British do. They speak of comfort "warming"—60 to 65 deg F—whereas our idea is comfort "heating"—70 deg F plus. Also, the reference to "central heating" in the article is not to steam mains in the streets, as here, but to the furnace in the basement, different from general British practice of grates or stoves in individual rooms.

Critics who have taken the lead in the electric fire controversy would have been less dogmatic if they had been more aware of the complications. And the controversy would never have arisen if the aims of those who plan had been rightly conceived and realized. Furthermore, dominating all other issues is atomic energy.

Can there be any doubt that we are at the beginning of a vast and fearful expansion in power? Electricity will be the medium for the distribution and application of this power. Its use for heating will be greatly increased to a point where even the combustion of fuel in the central heating systems of America will become redundant and where even the poorest home will have every room heated by electricity.

Shortsighted Policy

To say that at least twenty years must elapse before these changes begin, and that therefore our present shortage of fuel and generating plant are more important considerations are opinions of weight; but when some people say that electric fires should be banned or discouraged (the late Minister of Fuel said there was no future for them), not only are they lacking in vision but their judgment appears defective if they hope to cure our fuel troubles by such means.

Critics of the electric fire claim that it raises the peak load; that it decreases the load factor; and that it is wasteful owing to a low overall thermal efficiency. Further, they compare the electric fire unfavorably with the latest type of solid fuel grate.

It is true that domestic electric heating does raise the average load and also the peak load. The defenders of the electric fire must admit this obvious truth. It follows that if the use of electric fires were banned or restricted drastically then power cuts would be lessened or obviated. Yet no critic has had the courage or foolhardiness to offer a plan whereby this could be carried out for the obvious reason that it would be administratively and politically impossible to do it. One can well imagine the invidious position of the unfortunate official calling to collect electric fires from homes short of house coal on a cold winter day.

A smaller production of electric fires in the future is suggested: an idea which is superficially attractive because although it would only have a small effect for the first year or so there would be a cumulative effect which might be considerable after a number of years. But there are disadvantages. It would put a number of firms out of business and it would encourage the back street trader and the home handyman to make fires which would probably be shoddy and dangerous.

If by some unknown means they could prevent manufacture, so that at the end of, say, ten years the number of electric fires in use were considerably reduced, the critics would have achieved a reduction in the already low standards of domestic heating of this country to a point where, with just one solid fuel fire in the house, we would have achieved the most uncomfortable and spartan houses for winter use in the civilized world.

The result, too, would be a lack of privacy, often ignored in the arrangements of the smaller house, when the one and only warm room is often unsuitable for the student, the invalid, the lodger, and the boy and girl friends. And all this because the mining industry will not produce sufficient coal and because a reduction in the recommended number of power stations planned some years ago has caused a deficiency of generating plant.

American Comparison

On the subject of load factor the critics are not only unconvincing but unsound. The United States, they say, has a load factor of about 60 percent while ours is about 40 percent. The United States has a low heating load, we have a high one; hence, so the argument runs, the electric fire is the wasteful culprit. The unsoundness of this is clear when we realize, first, that the climates of the two countries differ in such a way as to need different methods of heating, and secondly that the use of working shifts in the factories here to the same extent as in America would also improve our load factor immensely and end our peak load power cuts.

The critics blame the electric fire but they might with more justice blame our unwillingness to work shifts, or our dull and foggy winter days and the consequent liberal use of electric lighting for workers in industry. Moreover, the defenders of the electric fire claim that it improves the load factor for the simple reason that it is used more during off-peak periods than otherwise and that our low load factor

is due not to electric fires but to the habits of industry.

Electricity vs. Solid Fuel

Surprisingly the opponents of the electric fire have concentrated on trying to prove that the electric fire is inefficient and wasteful. They could hardly have chosen, from their point of view, a worse argument, or have reduced it to such absurdity as when they claim that electric fires should not be used for more than 15 minutes at a time. Their argument is that as the solid fuel stove has an overall efficiency of at least 45 percent and the electric fire only 20 percent, therefore if we replace the electric fire with the stove we shall save large quantities of valuable fuel.

The answer by the defenders of the electric fire is broadly as follows: First, intermittent heating (4 hours or less) by electric fires is far more efficient than that of solid fuel fires of even the highest efficiency, and that as most domestic electric fires are used intermittently there would be a vast increase in coal consumption if solid fuel stoves were used instead. It is a matter of common knowledge that the solid fuel fire takes about 6 lb of fuel and two hours of time to get started and that it continues to give out heat when it is not wanted.

Secondly, the labor caused by the use of solid fuel fires or stoves is enormous. Not only does the laying, poking, feeding, and cleaning up of fires by the housewife or the maid amount to about 2,000 million man-hours a year, but add to this the tens of thousands of decorators, laundry workers, coalmen, and chimney sweeps, and it can be realized that tens of millions of capital is involved, and that hundreds of millions of pounds worth of labor is engaged per annum in dealing with solid fuel and its results. To all this must be added the effect of smoke pollution of the atmosphere on health and vegetation.

Thirdly, the solid fuel stove and slow burning grate rely more on convected heat than the electric fire. But convected heat from these stoves is not so economical as it appears in theory in obtaining comfort because British houses were never designed to be thus heated. The damp temperature and uncertain British climate calls for radiant rather than convection heating.

Fourthly, the use of electric fires means that a house can be built more cheaply by cutting out chimneys and fire grates; and more space can be provided for the architect in his planning. The chimneys are open ventilators sucking up the warm air in a house and wasting it to the outside atmosphere.

Coal Consumption

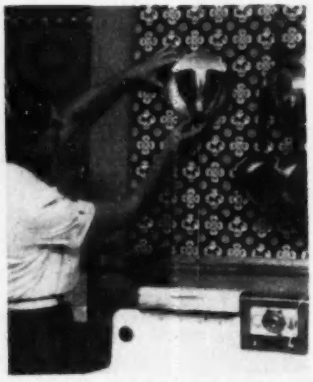
Fifthly, for every ten tons of relatively high grade coal used in domestic grates about one ton of low grade coal, useful neither for domestic nor export consumption, is burnt at the power stations to provide electricity for domestic electric heating. It seems odd that the critics place the emphasis on saving on to the one ton of poor coal rather than on to the ten tons of good coal, especially when the low grade coal is in plentiful and increasing supply which can only be consumed either by extra use of electricity involving the installation of electrical appliances in the home or by industry buying and installing extra machinery and plant.

The critics of the electric fire do not appear to have effective answers to these points nor to be able to contest the claims that the electric fire is more efficient for intermittent heating than any other type of stove or fire except the gas fire, and the most flexible, convenient and clean of all types, and the easiest to install.

The influence of the academic mind, in science and economics, can be plainly felt in the arguments used against electric fires. British thermal units mean more to it than the comfort and convenience of the home. A neat little plan means more to it than the broad trends and uncertainties of trade. Yet the post-war boom is slowly passing and may end in a slump, with some power stations idle for want of load. What then will be the soundness of any plan which removes a load beyond the possibility of immediate recovery?

Academic committees have a useful and necessary influence in offering detachment from trade interests; but they are dangerous unless balanced by a consideration for human relations and by the knowledge of the business man, administrator, practical engineer and consumer.

The average thermal efficiency of electricity sent out by the British Electricity Authority is about 20 percent at the consumer's terminals. The average efficiency is rising year by year. By 1960 it should be at least 25 percent. Plants in the United States achieve efficiencies of up to 37 percent. This increasing efficiency coupled with the vast expansion of power opened up by the application of recent progress in nuclear physics means inevitably cheaper electricity, far less use of solid fuel and a cleaner, more comfortable and efficient home for us to look forward to in the years ahead, human planning and politics permitting.



ONE OF NEWEST among 60 types of fixtures for Westinghouse Odorout lamps is shown in a favorite setting—the kitchen

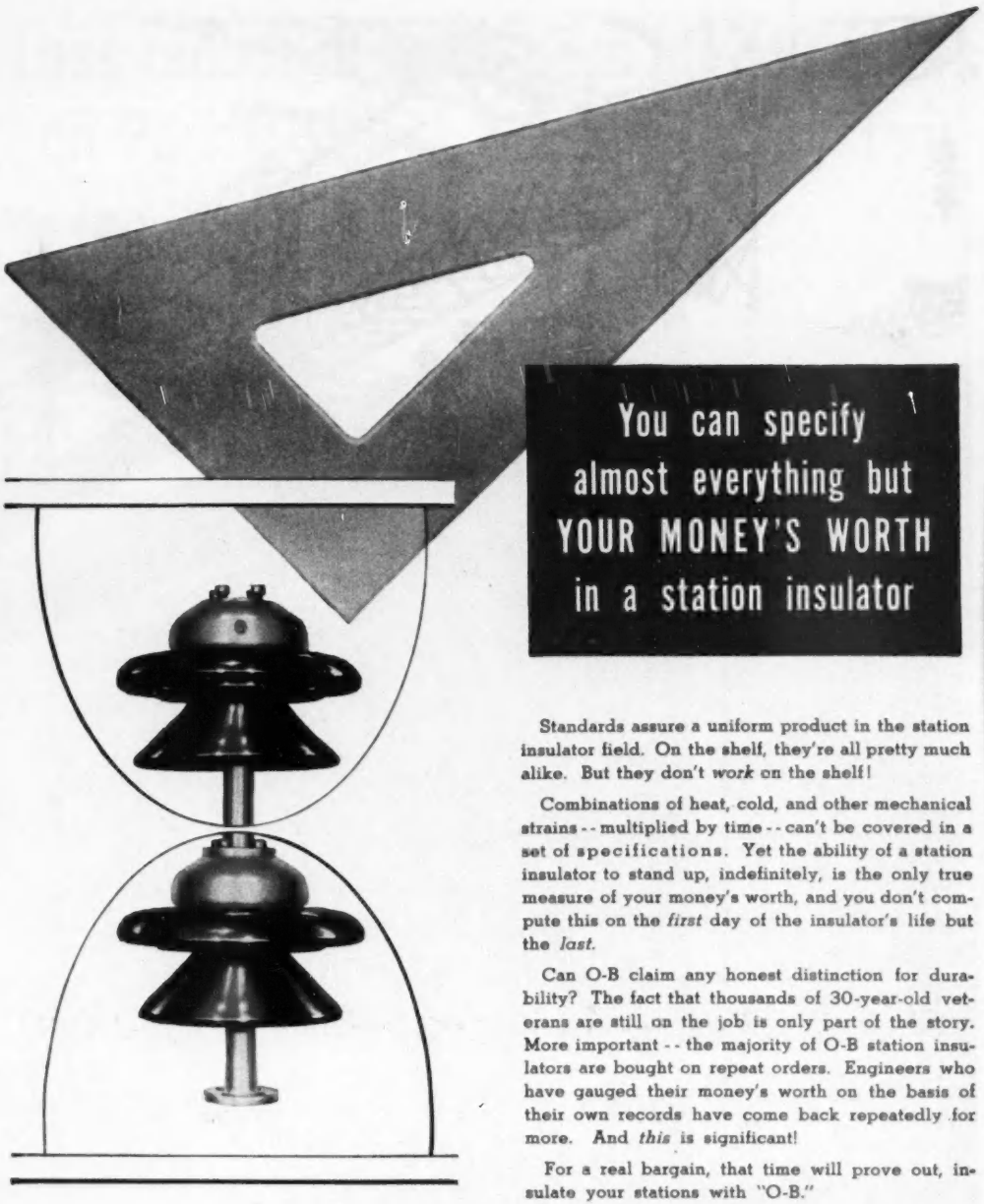
Westinghouse Steps Up Odorout Lamp Output

A 400% increase in production of its odorout lamps has been begun by Westinghouse Electric Corp. Used in special fixtures, the lamps destroy odors electrically by creating ozone, a natural oxidizer.

They produce invisible ultraviolet rays which react upon the oxygen in the air in the same way that nature does through an electric storm. The rays split the oxygen molecules, converting them into ozone which is not a camouflage but a natural oxidizer or destroyer of odors.

Frigidaire Heat Pump

Next year Frigidaire will have on the market a heat pump for complete residential air conditioning, according to an announcement by W. F. Switzer, manager of commercial and air conditioning sales. Frigidaire has high hopes of the market potential, expects room cooler sales in 1953 will be at least 50% over this year and sales of residential central system units to rise sharply.



You can specify almost everything but YOUR MONEY'S WORTH in a station insulator

Standards assure a uniform product in the station insulator field. On the shelf, they're all pretty much alike. But they don't *work* on the shelf!

Combinations of heat, cold, and other mechanical strains -- multiplied by time -- can't be covered in a set of specifications. Yet the ability of a station insulator to stand up, indefinitely, is the only true measure of your money's worth, and you don't compute this on the *first* day of the insulator's life but the *last*.

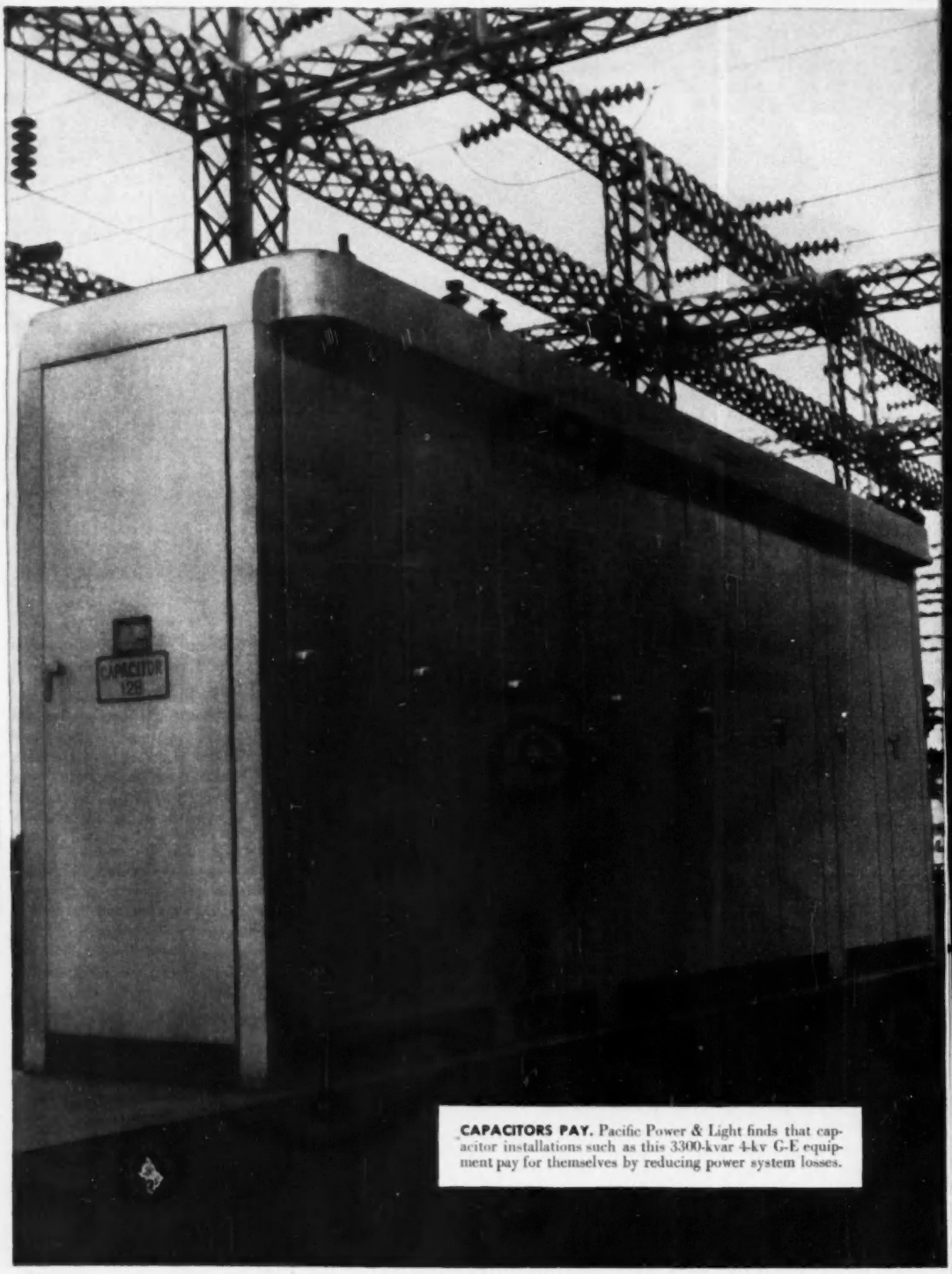
Can O-B claim any honest distinction for durability? The fact that thousands of 30-year-old veterans are still on the job is only part of the story. More important -- the majority of O-B station insulators are bought on repeat orders. Engineers who have gauged their money's worth on the basis of their own records have come back repeatedly for more. And *this* is significant!

For a real bargain, that time will prove out, insulate your stations with "O-B."

Ohio Brass

MANSFIELD, OHIO, U.S.A.

4238-H



CAPACITORS PAY. Pacific Power & Light finds that capacitor installations such as this 3300-kvar 4-kv G-E equipment pay for themselves by reducing power system losses.

Loss reduction alone pays for capacitors on Pacific Power & Light Co. system

Capacitors save 50,000,000 kw-hrs annually

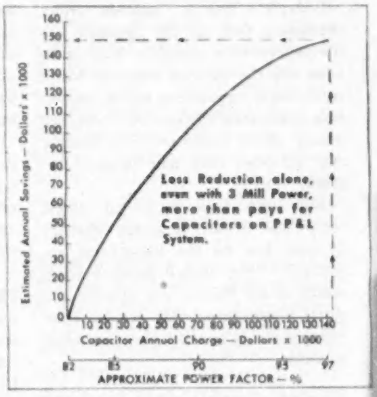
In its progressive program of power-factor improvement, Pacific Power & Light has installed 142,000 kvar of capacitors . . . 51% switched. This amounts to 1 kvar for every 2.43 kw of its 345,000-kw peak-load capacity.

Capacitors raise PF—reduce losses. Without these capacitors P P & L's power factor would be 82%—annual losses 285 million kw-hrs. In 1951, *with capacitors*, its power factor was 97%—losses 235 million kw-hrs.

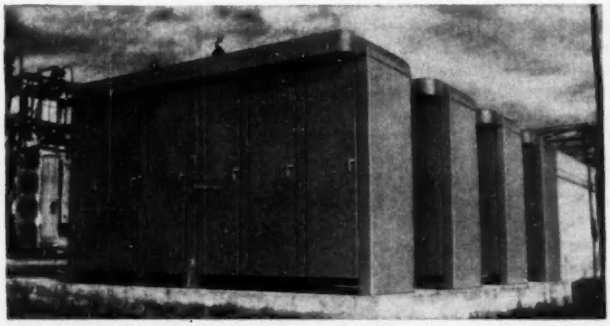
$150,000 saving pays for capacitors. Even at 3 mills per kw-hr this represents a $150,000 saving each year. Annual cost of carrying the 142,000 kvar of capacitors installed is $142,000 ($8 per installed kvar capitalized at 12½%). Thus, the saving on power losses alone more than pays for the capacitors.

Bonus of better voltage—reduced loading. Calculations show that the capacitors reduced voltage drop in overhead circuits by 23 to 48%, depending on conductor size and length. And they released an estimated 15% of kw capacity. Both at no extra cost!

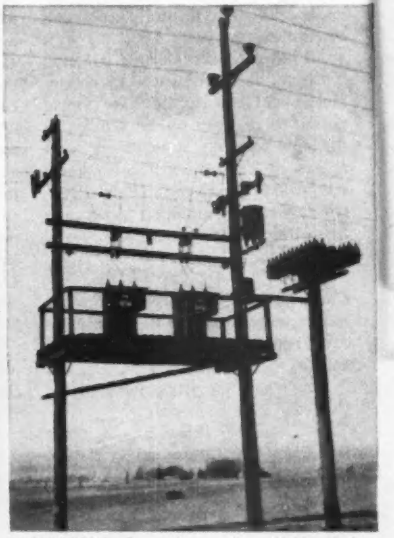
Many types of reliable General Electric capacitors are available to help you reduce losses on your system. They're economical to install, require practically no maintenance. For information call your nearest G-E Apparatus sales office, or write to Section 407-37, General Electric Company, Schenectady 5, New York.



SAVING ON LOSSES. Graph compares annual saving on losses with annual charge for capacitors as P P & L improved its power factor.



60,000 KVAR of capacitors—about 99% switched—have been installed at P P & L substations. The four 1500-kvar, 4-kv G-E equipments above are installed at the Company's Pendleton, Oregon substation. They supply bulk kilovars that reduce substation thermal loading as well as system losses.



82,000 KVAR of capacitors—about 17% switched—have been installed on distribution circuits. 600 kvar of G-E capacitors above are installed next to voltage regulators near Sunnyside, Wash.

GENERAL ELECTRIC

Muddle Over Rates in Colorado

Voters reject proposed changes which would have cleared up utility regulation in Denver, other 'home rule' cities

There's a gap in Colorado utility regulation that for the moment has the experts in a quandry. Two questions on the general election ballot would have crystalized utility regulation in the state's largest city—Denver—and utility rate-making in Denver and the other Colorado "home rule" cities.

But voters were in a "no" mood (only one of six proposed changes in state law on the ballot was approved). They turned down amendments to the Denver city charter and state constitution that would have brought clarity to the present muddled situation.

No Understanding of Issues . . . Observers generally agree that the "no" votes resulted from lack of understanding of the issues. But those favoring the measures are so far undecided about trying for "yes" votes in another two years when the state again has a general election ballot.

Denver voters refused a city charter amendment that would have vested power to regulate public utilities in the city council. State voters went against a constitutional amendment that would have given the Public Utilities Commission authority to set rates for privately owned utilities in "home rule" cities.

Court Actions Necessary . . . Now the only answer seems to be a series of court actions to settle the problem in each of the trouble spots.

Here's how the problem facing the PUC and utilities shapes up:

In Colorado, there are 14 home rule cities—little states within a state. Under Article XX of the Colorado constitution, each has authority to adopt a charter "which shall be its organic law and extend to all its local and municipal matters."

In other words, the state PUC can't touch a utility within a home rule city. The utility regulation and rate-making are under city—not state—jurisdiction. There's just one exception so far.

And in Denver, any power the city has to regulate local rates of any public utility operating there must under the city charter be exercised by the people by initiated ordinance. The people themselves must initiate and impose any rates increases.

How then would a utility obtain a rate increase? That is the big question. No one knows for sure. PUC officials doubt that many voters would approve an increase put to them on an election ballot.

PUC May Step In . . . For those utilities whose services and activities are not confined to Denver's home rule borders, PUC officials feel the state agency could be asked to step in. After PUC determination, new rates could be put into effect, but court action is considered inevitable.

The problem came to a head when Mountain States Telephone & Telegraph Co set up its Denver metropolitan exchange service in 1947. This gave telephone service and rates on a uniform basis both within Denver city limits and to neighboring suburban communities. The new rates were approved by the city council, but two citizens filed suit challenging the council-approved rates.

Two years later, while the city question was still in the courts, the state PUC stepped in. It filed suit for a declaratory judgement, naming the city, city counsel, the two citizens and MST&T.

The PUC contended that it had jurisdiction over the metropolitan exchange service since it extended beyond the limits of the home rule city.

The two suits were combined before the State Supreme Court, which early this year had the last word. Meanwhile, however, State Sen Stephen L. R. McNichols—who represented Denver in the state legislature—introduced a resolution in the 1951 session calling for a vote in the 1952 general election on the now-rejected constitutional amendment.

As he put it: "The people have the authority to regulate rates, but the people cannot exercise that authority without someone to act for them."

One Rate-Making Authority . . . McNichols argued that there should be one authority setting rates, and it would be an injustice to the taxpayer to expect each city to set up its own complicated rate-making authority to determine each adjustment when the state already has a staff of experts to do just that.

In its February, 1952, decision on the Denver telephone cases, the Supreme Court put it this way:

"To uphold the contention of the counsel . . . in effect would be to determine that each of these cities, in regulating telephone rates within their limits, should analyze and determine the property, revenue and expenses of the telephone company . . . in each city; that, by the exercise of some mysterious magic they should segregate these from the properties, revenues and expenses of the company not directly involved in furnishing service to the city in question; and arrive at a rate which would yield a fair return to the company on that portion of the property involved in providing such local service, and insure adequate protection to the consuming public.

"To assume that such a task can be accomplished effectively and efficiently, or at all, is manifestly absurd and ridiculous.

"In determining whether confiscation was brought about by any rate which might be established by any one of the 15 separate regulating agencies which would thus be operating upon the business of the telephone company at the same time, a court would of necessity be required to go beyond city boundaries and inquire into the property, revenues and expenses of such utility on a statewide basis in order to do justice . . ."

The Supreme Court concluded that the state PUC "is the sole agency authorized to regulate the business and rates of the Mountain States Telephone & Telegraph Co within the state of Colorado . . . and that municipalities operating as home rule cities have no power, authority or jurisdiction to attempt such regulation."

Those words crystallized the rate authority for MST&T. Will it take a similar court decision for each utility in a similar position in Colorado? PUC commissioners are afraid it will do just that.

Today in Utility Finance

YIELDS (%)

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE									
1952									
Nov. 26	**2.84**	**2.97**	**3.12**	**4.04**	**4.22**	**4.54**	**5.07**	**5.44**	**5.82**
Nov. 20	2.96	3.00	3.12	4.04	4.24	4.57	5.05	5.49	5.88
3rd 1952	2.99	3.03	3.16	4.10	4.26	4.61	5.18	5.59	5.96
2nd 1952	2.95	3.00	3.09	4.05	4.31	4.60	5.38	5.85	6.42
1st 1952	2.95	2.99	3.13	4.11	4.29	4.66	5.35	6.03	6.47
4th 1951	3.02	3.07	3.21	4.32	4.30	4.91	5.42	6.18	6.84

Data: Reis & Chandler, Inc.

EARNINGS

Company	Period Months Ended		Net Income 1952	Net Income 1951	Earnings Per Common Share 1952	Earnings Per Common Share 1951
Arkansas Power & Light	12	Oct.	$6,015,526(a)	$4,493,230	$....	$....
Consumers Power	12	Oct.	19,903,841	19,878,272	2.68(b)	2.94(b)
Dallas Power & Light	12	Oct.	4,090,998	3,407,870	....	....
Detroit Edison	12	Oct.	16,160,445	15,302,175	1.61(c)	1.69(c)
Houston Lighting & Power	12	Oct.	8,548,223	6,487,569	....	....
Iowa Southern Utilities	12	Oct.	1,012,296	785,078	1.44(e)	1.51(e)
Kansas City Power & Light	12	Oct.	5,722,066	4,300,714	....	....
Louisiana Power & Light	12	Oct.	3,044,535	2,524,710	....	....
Middle South Utilities, consolidated	12	Oct.	13,342,961	10,681,439	2.06(f)	1.82(f)
Mississippi Power & Light	12	Oct.	3,724,260(g)	3,005,031	....	....
Shawinigan Water & Power	9	Sept.	3,816,542	3,308,556	1.39	1.16
Tampa Electric	12	Oct.	2,188,438	1,739,945	3.38(h)	2.91(h)
Texas Electric Service	12	Oct.	8,170,278	6,329,697	....	....
Virginia Electric & Power	12	Oct.	12,014,006	10,162,491	1.80(i)	1.72(i)

Notes—(a) After deducting $482,665 for federal income taxes due to amortization of emergency facilities; (b) Based on 6,176,693 shares in 1952 and 5,615,176 shares in 1951; (c) Based on 10,009,608 shares in 1952 and 9,040,008 shares in 1951; (e) Based on 579,661 shares in 1952 and 466,656 shares in 1951; (f) Based on average shares outstanding and includes tax reduction of $1,138,858 in 1952 due to amortization of emergency facilities; (g) After deducting $407,958 for federal income taxes due to amortization of emergency facilities; (h) Based on 621,776 shares in 1952 and 598,441 shares in 1951, and (i) Based on average number of shares outstanding during each period and before giving effect to extraordinary reduction of $489,800 in 1952 in federal income taxes resulting from amortization of emergency facilities.

FINANCING

Company and Description	Amount of Offering ($000)	Offering Price	Yield to Public
WEEK OF NOVEMBER 27 TO DECEMBER 3			
Bonds			
Florida Power Corp—1st mtg 3¼% 1982	$15,000	101.804%	3.28%
WEEK OF DECEMBER 4-10			
Preferred Stock			
Commonwealth Edison—1,155,730 sh $25 par $1.40 cum. conv. (being offered commonholders on 1-for-12 basis, record Nov. 24 to expire Dec. 10)	$35,828	$31.00	4.52%
Common Stock			
Western Light & Telephone—65,168 sh (being offered to commonholders on 1-for-5 basis, record Nov. 26 to expire Dec. 9)	$1,434	$22.00	7.27%
SCHEDULE FOR DECEMBER-JANUARY			
Bonds			**Bid Date**
Kansas City Power & Light—1st mtg	$12,000	.....	Jan. 20
Ohio Power—1st mtg	22,000	.....	Jan. 20
Iowa-Illinois Gas & Electric—1st mtg	8,000	.....	Jan. 27
Debentures			
Consolidated Gas Electric Light & Power—conv. 3¼% 1967 (being offered to commonholders on basis of $100 debenture for each 30 shares of common, record Dec. 1 to expire Dec. 18)	$16,484	$100.00	3.25%
Preferred Stock			
Ohio Power—100,000 sh $100 par	$10,000	.....	Jan. 20
Iowa-Illinois Gas & Electric—60,000 sh $100 par	6,000	.....	Jan. 27
Ohio Edison—150,000 sh $100 par	15,000	.....	Jan. 13
Common Stock			
Cleveland Electric Illuminating—557,895 sh (being offered commonholders on 1-for-5 basis, record Nov. 24 to expire Dec. 19)	$24,129	$43.25	6.01%
Ohio Edison—479,846 sh (to be offered to commonholders on 1-for-10 basis, record Jan. 8 to expire Jan. 23)	.....	.....	.....
Consumers Power—617,669 sh (to be offered commonholders on 1-for-10 basis, record Jan. 15 to expire Jan. 30)	.....	.....	.....
UNSCHEDULED AND UNDER CONSIDERATION			
Bonds			
Central Maine Power—1st general mtg	$6,000	.....	.....
Toledo Edison—1st mtg	7,500	.....	.....
Central Hudson Gas & Electric—1st mtg	6,000	.....	.....
Common Stock			
Central Maine Power	$5,000	.....	.....
Toledo Edison—600,000 sh	.....	.....	.....

FINANCIAL BRIEFS

New York Society of Security Analysts Program Committee has scheduled the following luncheon meetings: Dec. 10, Virginia Electric & Power Co, J. Holtzclaw, president; Dec. 17, California Oregon Power Co, A. S. Cummins, president; Jan. 7, New York Public Service Commission, F. T. Mylott, commissioner; Jan. 14, Lake Superior District Power Co, C. A. Donald, president; Jan. 21, British Columbia Electric Co, A. E. Grauer, president; Feb. 4, California Electric Power, Albert Cage, president, and Feb. 25, Hartford Electric Light Co, K. P. Applegate, president.

Republic Service Corp has received SEC approval to sell to General Public Utilities Corp, all of the outstanding 1,000 shares of common capital stock of its wholly owned subsidiary, Brockway Light, Heat & Power Co in exchange for 20,150 common shares of GPU . . . **Duke Power Co** will pay on Dec. 22 an initial dividend of 75¢ a share on its new common stock. This is equivalent to $2.25 a share on the old stock which was split 3-for-1.

Tucson Gas, Electric Light & Power Co has sold privately $5-million first mortgage bonds 3⅝% due 1982 and 20,000 shares $100 par 4.75% preferred stock . . . **Nesbitt, Thomson & Co group** offers $15-million British Columbia Electric Co first mortgage bonds 4¾% due 1977 at 99.25 to yield 4.80% . . . **West Penn Electric Co** will pay Dec. 29 a common quarterly dividend of 55¢ a share versus 50¢ previously.

REGULATION

Alabama Public Service Commission has postponed hearing of Alabama Power Co's request for a rate increase from Nov. 20 to an undetermined date . . . **Niagara Mohawk Power Corp** in its rate hearings has told the New York Public Service Commission that its western division has a return of less than 6% on its "rate base."

Coast Counties Gas & Electric Co has received California Public Utilities Commission approval to increase electric rates $564,000 a year, effective Dec. 15. The company had applied for $842,000 a year.

Manufacturers Expand Facilities

Electrical equipment producers are striding forward in their plant construction programs

Building programs started by electrical equipment manufacturers have been picking up momentum. Throughout the country these firms are busy with ground breaking ceremonies, construction activities, production schedules, and plans for plant expansion.

Westinghouse

In carrying out its $296-million expansion program, Westinghouse Electric Corp recently broke ground at Raleigh, N. C., for a Meter Division plant. The new $10-million plant will manufacture watthour meters—devices for measuring and recording electric power.

Erection of the meter plant, which will consist of two buildings with an interconnecting wing, is scheduled to begin about March 1, and the first meter is expected to be in production late in 1953. When completed the project will provide approximately 500,000 sq ft of floor space. The one-story plant, of brick and corrugated asbestos construction, will be 1,020 ft long and 420 ft deep. The two-story brick office building will be 460 ft long and 80 ft deep, while a connecting one and two-story wing between the office and plant will be 180 ft wide by 80 ft deep. Second story of the wing will house office air conditioning apparatus and engineering laboratory generating equipment.

Construction has been started on Westinghouse's lighting fixture plant at Vicksburg, Miss. This Lighting Division plant will be devoted exclusively to the manufacture of fluorescent lighting fixtures for commercial and industrial use, and industrial incandescent lighting fixtures. Plans call for a one-story steel and brick structure running 900 ft along U. S. Route 61, and adjacent to the municipal airport six miles south of Vicksburg. Scheduled for completion in October, 1953, the plant is expected to provide employment for about 800 once in full operation.

Production of electronic tubes has gotten under way in the two new manufacturing plants of the newly formed Westinghouse Electronic Tube Division. Located at Elmira and Bath, N. Y., the two new plants ultimately will attain volume production of virtually all types of radio and television power and receiving tubes when manufacturing operations are completely transferred from the Lamp Division at Bloomfield, N. J., to the Electronic Tube Division.

Headquarters offices of the Electronic Tube Division are located in the recently completed Elmira plant (EW, Oct. 13, p 46).

General Electric

Among the other companies active with building programs is General Electric Co. GE recently opened a multi-million-dollar plant for the manufacture of fractional-horsepower motors at Linton, Ind. The plant will be engaged in the production of the company's newly developed Form G motor.

GE will also launch a $3-million expansion program early next spring at its Bridgeport, Conn., plant. Upon completion of a 99,000-sq ft plant addition, plans are to transfer GE's wire and cable manufacturing operations from Schenectady, N. Y., and York, Pa. to Bridgeport. The company plans to move its Small Appliance Division fan manufacturing operations from Bridgeport to a new location in the Southwest. The move is part of a consolidation program for fan and vacuum cleaner manufacturing. GE has been manufacturing vacuum cleaners in its Cleveland (Ohio) works.

Gould-National, Foxboro

Gould-National Batteries, Inc, has completed its new $3-million plant at Kankakee, Ill. Located on a 30-acre site, the structure contains approximately 200,000 sq ft of floor space and will produce military batteries as well as batteries for civilian industrial users.

Foxboro Co, Foxboro, Mass., has acquired new factory facilities at Dallas, Tex., for the assembly of control valves. The new quarters almost double the area devoted to valve assembly and warehousing and will facilitate rapid delivery and service to industries throughout the South and Southwest served by the Dallas branch.

Honeywell, Union Metal

Minneapolis-Honeywell Regulator Co plans a $900,000 expansion of its main plant at Minneapolis. The company has filed an application with the government for a certificate of necessity to construct a two-floor addition that will add 59,000 sq ft of floor space to Honeywell's present main plant building.

Union Metal Manufacturing Co, Canton, Ohio, expects initial production to begin within the next 30 to 60 days at its Brampton, Ont., plant now under construction. Initial production is to consist of parking meters and will be followed by production of switch boxes, meter enclosures, and similar products of the firm's Superior Switchboard and Devices Division. The new plant will be known as the Union Metal Manufacturing Co of Canada, Ltd.

Cornell-Dubilier, Burndy

Expansion of its capacitor manufacturing operations in the South has been announced by Cornell-Dubilier Electric Corp, South Plainfield, N. J. The company, which has a plant in operation at Fuquay Springs, N. C., has purchased a 27-acre tract of land for erection of a plant at Sanford, N. C. This plant will be the largest operation of the New Jersey company, which now operates 11 plants in six states.

Burndy Engineering Co, Inc, Norwalk, Conn., has acquired an 18,000 sq ft warehouse in the Bronx, N. Y. To be called Central Warehouse, this new structure will facilitate the handling and storage of parts and finished products.

Federal Breaks Ground for $1-Million Plant

Federal Electric Products Co, Newark, N. J., manufacturer of safety switches and circuit breakers, has broken ground for its $1-million plant in the Keyser Valley section of West Scranton, Pa.

To be known as LIFE Plant 6, the Federal plant is the sixth in the LIFE-SLIBCo series. It brings to 21 the new community plants built through the Lackawanna Industrial Fund Enterprises (LIFE), Scranton-Lackawanna Industrial Bldg Co (SLIBCo), Scranton Plan Corp, and Scranton Industrial Development Co program for erection of modern plants at low cost for favorable rentals to responsible companies.

The plant, which will be located on a 32-acre tract of land, will be a two-unit facility. The main building will be an industrial one-story structure of 132,000 sq ft. The 30,000 sq-ft second unit will be erected adjament to the larger plant and will be used for administration and testing. Potential employment of the new Federal plant is fixed at from 650 to 750 workers.

Orangeburg to Construct New Plant in California

Orangeburg (N. Y.) Manufacturing Co, Inc, manufacturer of non-metallic pipe and electrical conduit, has purchased 20 acres from the Southern Pacific Railroad at Newark, Alameda County, Calif., as a site for a new plant.

Estimated to cost about $2.5 million, the 85,000-sq ft plant is expected to be in operation in the fall of 1953. It will provide employment for about 100 persons.

The company, which has been manufacturing conduit for electrical wiring since 1893, completed last summer a $2-million addition to its main plant at Orangeburg, N. Y.

SALES ASSIGNMENTS

COMPANY STAFFS

Minneapolis-Honeywell Regulator Co has appointed Fred B. Akerson industrial manager of its Portland, Ore., regional office, Akerson, formerly with the industrial sales staff of Honeywell's Boston branch, succeeds Lester W. Williams, who has been given chemical industry assignments in the East.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied.

UTILITIES

Proposed Construction

Ark., Little Rock—Great Plains Television Properties, c/o U. S. Corp. of Illinois, 33 North La Salle St., Chicago, 2, Ill., television station, $247,000. **Janaky & Bailey**, National Press Bldg., Wash., D. C., consult. engrs.

Calif., San Diego—Charles E. Salik (KCBQ), P.O. Box 1629, Hotel Manor, Zone 12, television station, $496,000. Robert M. Silliman, 1011 New Hampshire Ave., Wash., D. C., consult. engr.

Calif., San Jose—San Jose Television Broadcasting Co., P.O. Box 995, San Jose television station, $640,000. E. C. Page, Bond Bldg., Wash., D. C., consult. engrs.

Colo., Grand Junction — Western Slope Broadcasting Co. (KFXJ), P.O. Box 30, Grand Junction, television station, $126,000. Commercial Radio Equipment Co., 1319 F St. N.W., Wash., D. C., consult engr.

Colorado—San Isabel Electric Assn., Pueblo, 82 mi. 7,200 volt rural distr. lines, Pueblo, $100,000. Plans deposit $10. C. H. Guernsey & Co., 2701 N. Oklahoma St., Oklahoma City, Okla., engrs.

Fla., Jacksonville — Florida-Georgia Television Co., 1746 E. Adams St., television station, $645,000. Weldon & Carr, 1605 Connecticut Ave. N.W., Wash., D. C., consult. engrs.

Fla., Tallahassee — City, City Hall, power plant addn. Approx. $500,000. Plans deposit $50. Reynolds, Smith & Hills, P.O. Box 4817, Jacksonville, engrs.

Ga., Savannah — Georgia Refrigerated Warehouses, c/o Robert & Co. Assocs., archts., 96 Poplar St. N.W., Atlanta, cold storage warehouse $1,200,000.

Idaho, Idaho Falls—Idaho Falls Television, Inc. (KIFI), 339 Broadway, television station, $100,000. Grant R. Wrathall, Aptos, Calif., consult. engr.

Ind., New Albany — Public Service Corp. of Indiana, Inc., 1000 Main St., Plainfield, sub-station, $1,500,000. Sargent & Lundy, 140 S. Dearborn St., Chicago, 3, Ill., consult. engrs.

Ind., Richmond — City of Richmond Electric Plant, new light plant, $750,000. Eral Beck, Richmond, plant mgr.

Minn., Adrian—Village, R. M. Hanson, clk., furnish, install diesel generating unit municipal power plant, $100,000. Plans deposit $5. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, engrs.

Missouri—Southwestern Power Admin., P.O. Drawer 1619, Tulsa, Okla., sub-station, near Clinton, Henry Co.

Mont., Havre — North Montana Broadcasting Co. (KOJM), 426¼ First St., television station, $154,000. Robert M. Silliman, 1011 New Hampshire Ave., Wash., D. C., consult. engr.

N. H., Manchester — Granview, Inc. (WKBR), 155 Front St., television station, $140,000. W. F. Rust, Jr., Manchester, consult. engr.

O., Rocky River—Cleveland Electric Illuminating Co., Public Square, Cleveland, Zone 1, electric power sub-station, 20550 Center Ridge Rd. $500,000.

Okla., Tulsa—All-Oklahoma Broadcasting Co., (KRMG), 311 S. Denver Ave., television station, $719,000. McIntosh & Inglis, Wyatt Bldg., Wash., D. C., consult engrs.

R. I., Providence — New England Television Co. of Rhode Island, 514 Industrial Trust Bldg., Zone 3, television station, $291,000. J. Gordon Keyworth, Williamstown, Mass., consult. engr.

Tennessee—U. S. Eng., 302 Federal Office Bldg., Nashville, Zone 1, furnish 4 main unit turbines with nominal rating of 32000 hp. at 40 ft. head, adjustable blade propeller type, Approx. $2,000,000; furnishing 4 main unit generators with 25,555 kva, full power rating, vertical shaft type, $2,000,000, for Old Hickory Lock and Dam, Cumberland River, near Carthage.

Tex., Dallas—Dallas Power & Light Co., Dallas Power & Light Bldg., 185,000 kw. turbine generator plant unit, Mountain Creek area. $16,100,000.

Washington—Bonneville Power Admin., 827 N. E. Oregon St., Portland, Ore., constr. Franklin sub-station, Franklin Co. Inv. 6810. Plans deposit $25. L. C. Stewart, 827 N. E., Oregon St., Portland, Ore., engr.

W. Va., Charleston—Joe L. Smith, Jr., Inc. (WKNA) WJLS Bldg., Main and Kanawha Sts., Beckley, television station, $326,000. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engrs.

Wis., Milwaukee — Milwaukee Area Telecasting Corp., 411 E. Mason St., television station, $658,000. Waldon & Carr, 160 Connecticut Ave. N.W., Wash., D. C., consult. engrs.

Wyo., Cheyenne — Frontier Broadcasting Co., (KFBC) Plains Hotel, Cheyenne, television station, $238,000. Robert C. Pfannenschmid, c/o owner, consult. engr.

B. C., Comox—Defence Constr. Ltd., 360 Homer St., Vancouver, installing electrical distr. sys. and transformer sub-station, R.C.A.F. Station. Plans deposit $100. J. L. Adams, 360 Homer St., Vancouver, engr.

Low Bidders & Contracts Awarded

Ark., Pine Bluff—Ditmars, Dickmann & Pickens, Gazette Bldg., Little Rock, Ark., CA $490,000, service center. Arkansas Power & Light Co., Simmons National Bldg., Pine Bluff, Ark. Erhart, Eichenbaum & Rauch, Wallace Bldg., Little Rock, Ark., archts.

Fla., Kissimmee — Fairbanks-Morse Co., 760 Lee St. S. W., Atlanta, Ga., CA, $441,600, furnishing, installing 2 diesel generators at Municipal power plant. City, City Hall, Kissimmee, Fla.

Nebr., Lincoln — Consumers Public Power Dist., 1452 25 Ave., Columbus, Neb., Owner Builds. $145,000. Dispatch plant, 2nd and N Sts.

Tex., Dallas—Dallas Power & Light Co., Dallas Power & Light Bldg., Dallas, Tex., Purchase and Hire. $8,900,000. 60,000 kw. turbine electric generating plant unit.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Ala., Birmingham—Howard College, 7725 2 Ave. South, plans by Van Kuren, Davis & Co., 3004 7 Ave. S., college group of buildings, $8,000,000.

Ariz., Phoenix—Reynolds Metals Co., Reynolds Metals Bldg., Richmond, 19, Va., (selected list bidders) 462,000 sq. ft. aluminum extrusion bldg. $21,000,000.

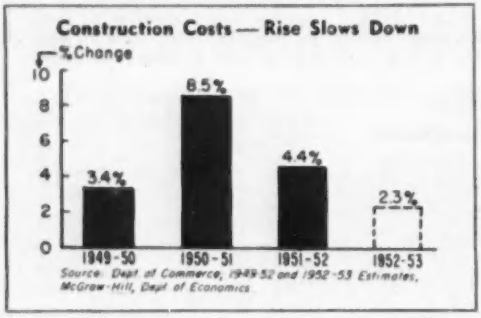
Ore., The Dalles—Harvey Machine Co., Inc., 19200 S. Western Ave., Torrance, Calif., Defence Production Admin. Authority sought for aluminum reduction plant. $45,000,000. Lawrence Harvey, c/o owner, engr.

Tex., Houston — South Texas National Bank, 213 Main St., plans by Kenneth Franzheim, 2402 Crawford St., 20 story, bsmnt. bank and office, $9,000,000.

Low Bidders & Contracts Awarded

N. Y., Jackson Heights—Syndicate, c/o William P. Hahn, 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. $25,000,000. 6 story APARTMENTS and SHOPPING CENTER on tract on north side of Northern Blvd. between 69 and 75 Sts., JACKSON HEIGHTS, N. Y.

ELECTRICAL BUSINESS OUTLOOK



Construction Costs Outlook...

. . . is for another year of rises. But this time jump will be much less than in last two years

It looks as if the big post-Korea rise in construction costs is nearing its peak. They may go up a bit over the next year. But any rise is likely to be slight compared with the big ones of the past two years. The cost of new buildings may actually decline in some areas.

Weakening pressure on prices of building materials is mainly responsible. Materials jumped sharply in the year after Korea. Today, many have slipped well below their post-Korea highs. More downward price adjustments are likely.

Declining construction volume is behind some of the weakness in materials prices. The decline has been disguised by the steady upward movement in dollars spent on construction. But these have been inflated dollars. Physical volume of construction went down a little in 1951 and will probably go down a little this year.

Supply Catches Up . . . The fact that some industries making materials have more than met demand—and thus built up big inventories—contributes to the price outlook. Lumber was the first material in oversupply. Its price dropped, recovered, now seems likely to go down again next year. Other materials used in homebuilding also are expected to drop. Prices of metals and heavy construction materials like cement have stayed stronger than lumber. But weakness is showing up here, too. Lead and zinc are now far below their levels of last year.

Cement is still going strong. But stocks have been running well ahead of last year. In August stocks were 12% higher than in August, 1951, while shipments were up only 5%. No general drop in cement prices is expected in the next nine months.

Demand for structural steel has been heavy ever since Korea started, but builders should not have trouble getting most kinds of steel after the first quarter of 1953. So structurals, which jumped twice in price in the past two years, are not expected to rise again. Prices may begin to slip a bit in the second half of next year.

Copper also is moving into better supply. The picture is confused by the government's multiple pricing system—with one price for domestic metal, another price for imports, and a number of other prices for high-cost producers. Once the price structure is cleared up early next year there will be plenty of copper for everyone. And—though domestic prices might go up when price controls are removed—there's so much copper available that the price is virtually sure to come down again within a few months.

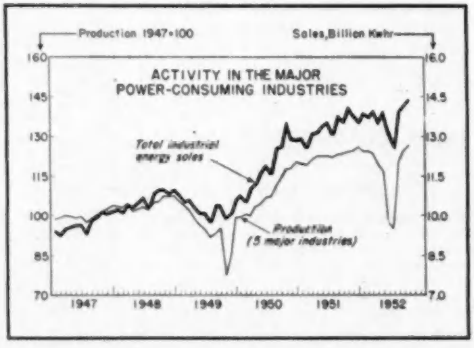
Plenty of Aluminum Looking for Markets . . . There will be enough aluminum for everyone after the first quarter of 1953; so little, if any, price increase is expected. Producers will be concentrating on trying to expand civilian markets as their capacity mounts to record heights. And the way to build a market will not be to raise prices.

In Summary: The trend of materials prices is steady now, but likely to be down after the first of the year. Declines are not expected to be large—not so long as construction volume stays high as it will in 1953. And not all materials will drop in price. But the general trend is down.

Overall construction costs, on the other hand, will go up again, as they have since 1949 because labor will get more wage increases. Many contracts open in the spring, and construction will be humming, which means that there won't be much resistance to granting many of the union demands.

But there's a good chance that costs will level off completely once the next round of wage increases is past. One reason is the construction volume may begin weakening toward the end of next year, housing may be down, and industrial construction will be tailing off.

So, while average costs in 1953 will be perhaps 2.3-2.5% higher than the average for this year, the change between the end of 1952 and the end of next year is likely to be much smaller—perhaps as little as 1%.



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